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COMMUTER EXPENDITURE PATTERNS IN THE EDMONTON REGION: AN EXAMINATION OF A SPREAD EFFECT FROM A SPONTANEOUS GROWTH CENTRE

by

© ALLAN GEOFFREY WILLIAMS

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

DEPARTMENT OF GEOGRAPHY

EDMONTON, ALBERTA

FALL, 1978

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled COMMUTER EXPENDITURE PATTERNS IN THE EDMONTON REGION: AN EXAMINATION OF A SPREAD EFFECT FROM A SPONTANEOUS GROWTH CENTRE submitted by ALLAN GEOFFREY WILLIAMS in partial fulfilment of the requirements for the degree of Master of Arts in Geography.

R. G. Lamb
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Date June 26th 1978

ABSTRACT

Although the notion of extensive spatial impact lies at the heart of growth centre policy, a review of the literature illustrates the dearth of empirical study and the paucity of information about the spread effects of growth. The limited evidence available suggests that the journey to work is potentially an important spread mechanism as commuters may transfer earned income to satellite communities, thus generating further economic activity in the retail and service trade sector particularly, by their expenditures. This aspect of commuting, however, is an area where there has only been slight empirical testing of theories concerning the spread effects from growth centres. And there have certainly been no estimates of the extent of generated economic benefits in specific peripheral communities using micro-data.

In an effort to calculate the economic impact of these commuter expenditures upon the local economy, it is necessary to determine the local propensity to consume. To do this, however, one is immediately confronted with the question of why households purchase where they do. The concern is not so much with the items being purchased or even with when the purchase is made; rather it is with those variables which influence the process a household goes through when deciding whether a particular purchase will be made in the community of residence or elsewhere.

A household questionnaire was therefore designed in order to provide detailed information about the spread effects from a

spontaneous growth centre - the City of Edmonton - via commuter expenditures, to the hinterland of Edmonton, together with the factors influencing these patterns. Households in four urban municipalities - Fort Saskatchewan, Leduc, St. Albert and Stony Plain - were selected for interview along with a sample of country residents in the Counties of Parkland and Strathcona. In addition to questions asked of respondents on purchases and expenditure patterns, diaries were distributed to willing respondents to allow more detailed records of purchasing to be made. The diary survey was undertaken during the summer of 1977 as well as the winter of 1977/78 in order to account for any seasonal variations in expenditures.

Data analysis indicates that:

1. By absolute value of expenditures, a large proportion are located in the community of residence;
2. The local propensity to consume varies according to the type of good or service demanded;
3. The extent to which retail and service facilities are used in Edmonton varies by the socio-economic status of the commuter;
4. The length of residence in a small town or rural acreage subdivision has little or no effect upon the propensity to consume locally; and
5. The location of employment does affect the location-of-purchase decision.

The final step in the analysis considers that proportion of expenditures made locally by commuter families in order to provide crude estimates of the commercial property requirements in each of the selected urban municipalities.

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CHAPTER ONE

INTRODUCTION

I. Background to the Problem

It has been stated that the small town development research question which ultimately must be answered is whether we should encourage the movement of jobs to people in small towns (that is, small town industrialisation) or the movement of people from small towns to jobs (Boehm and Pond, 1967: 7). A third alternative, however, does arise when a small community is located near a large urban centre. In this situation, residents are able to maintain a small town residence and commute to the nearby large centre to obtain employment.

The effect of these alternative strategies on the overall economic development potential of small towns is not understood at present. Such explicit recognition appears necessary if planners are to be in a position to determine whether positive net changes occur as a result of particular small town development projects.

However, in order to analyse the overall impact of these development projects, there must be an increased understanding of the complex inter-relationships which exist in the local economy. The traditional role of the retail trade and service sector in small communities in (1) providing an important source of local employment; (2) providing an important source of local business property tax revenues; and (3) serving as an indicator (often reflected by physical appearance, attitudes of local entrepreneurs, et cetera) of overall development potential in the minds of residents, makes the understanding of interrelationships with this sector of crucial importance.

The purpose of the present study is to examine the influence of the location of employment upon the location-of-purchase decision. Specifically, the study attempts to assess the importance of the residential dormitory function to small town and rural county development in the hinterland of the City of Edmonton. This will be determined by measuring the spread effects from the spontaneous growth centre of Edmonton, via commuters' expenditure patterns, to the hinterland of Edmonton.

II. The Problem

During the past decade, there has been a rapid development of residential subdivisions in small towns and rural counties adjacent to the City of Edmonton. Attracted by lower taxes, lot prices and overall building costs, together with a smaller community environment, residents have not been deterred by the expense or time involved by a longer journey to work to the City. Although these subdivisions have been approved by the municipalities concerned and the Edmonton Regional Planning Commission, there is a feeling on the part of the municipalities that the costs of servicing the "dormitory" subdivisions are not being balanced by the revenues received from them (Bettison, Kenward and Taylor, 1975: 254-255). At the same time, the City of Edmonton considers that commuters from these subdivisions are employed in the City and use its services but contribute little to the City in terms of revenues particularly from property taxes.

The missing link, therefore, in this equation is the benefit accruing to the small towns, counties and the City of Edmonton from the location of expenditures. Although the impact of housing development on commercial

properties has received considerable attention, the successful measurement of the relationship between expenditure patterns and commercial property values and hence potential tax revenues, has been limited. A dollar benefit has been implied but never measured. Therefore, it is suggested that this has led to a serious underestimation of the benefits to small towns and counties from residential dormitory development.

It is clearly evident that the residential dormitory function has been overlooked as a potential alternative policy for local economic development since many of the small communities in the metropolitan region are seeking to diversify their economies with industrial and commercial as well as residential growth. This policy of "balanced development", however, places the municipality in direct competition with the City and other municipalities as well as raising its debt for an increasing variety and volume of services. The outcome of this policy is dependent largely upon the locational decisions of private investors and industrialists, whose decisions, in turn, are influenced by the desirability of the location or the costs of services and land. Should the municipalities be unsuccessful in their attempt, they remain with debt burdens and used land and facilities.

Therefore, it is hoped that the specification of the influence of the location of employment upon the purchase location decision will allow planners to predict, a priori, the probable total impact of various proposals to stimulate the development of small towns.

III. Literature Review

A. Perspective

Although geographers and others (Dickinson, 1947, 1964; Bogue, 1949;

Duncan et al., 1960; Duncan and Lieberson, 1970) have long recognised the relationships between a metropolitan centre and its region, there has been an unmistakable change in the thrust of this symbiosis (Lamb, 1975: 1). Traditionally regarded as the product of resource utilisation in its surrounding region, the larger urban centre has since freed itself from its hinterland and has been able to achieve self-sustaining growth by acquiring new industrial export bases (Thompson, 1965: 2-3). The hinterlands which gave birth to large processing and trade centres have in general experienced declines in primary industries, and now depend upon their metropolises as a source of support. As Borchert points out in a recent article: "The resource-based economy of the region has ceased to support most of the economic growth of the metropolis; meanwhile the metropolis lends increasing support to the surrounding region" (Borchert 1972: 352). Thus, the metropolitan centre is no longer the region-server; instead, the hinterland region responds to the ebb and flow of metropolitan demands. This was, in fact, recognised by Bogue in his treatise The Structure of the Metropolitan Community.[1] In this work, he advances the hypothesis of metropolitan dominance, that is, the distribution of the 'human population' and various 'human activities' is spatially organised and economically associated with the City and its activities.

Until recently, however, most studies of the relationship between a city and its region were merely concerned with defining and mapping the sphere of influence of cities. With the development of the growth centre concept, a dynamic extension of the concept of sphere of influence has been provided. The growth centre concept, which is at the heart of the

---

[1] Bogue, D.J. (1949). The Structure of the Metropolitan Community: A Study of Dominance and Subdominance, University of Michigan Press, Ann Arbor, Michigan.

core-periphery problem, demands investigation of the ways in which an urban centre's activities may stimulate, not stimulate, or depress economic development in the surrounding area. In this regard, the present study is concerned with the impact of a "spontaneous"[2] growth centre - the City of Edmonton - on small town and county development within its hinterland by way of income transfers resulting from labour commutation.

B. Growth Centres: Their Spatial Impact

The growth centre is a concept which originated two decades ago in the seminal work of Perroux (1955), Hirschmann (1958), and Myrdal (1957). Today, despite the vast amount of research activity which has been directed at various aspects of growth centre strategy, the concept is still far from being well-established and unambiguous. Indeed, several key issues of both theoretical and applied interest remain unresolved (Lamb, 1975: 151). This study focuses upon one of these issues, namely, the contention that the spatial concentration of economic growth within a few selected places or "growth centres" is an efficient means of indirectly promoting higher levels of development over a much wider geographical area (Moseley, 1973a: 57). "Growth impulses and economic advancement.....filter and spread to smaller places and ultimately infuse dynamism into even the most tradition bound peripheries"

---

[2]The term "spontaneous" refers to those growth centres which are growing without the benefit of special government assistance, or at least without the benefit of conscious or explicit public policy. "Induced" growth centres, in contrast, are those in which policy is trying to promote growth. In this sense, the designation of a locality as a growth centre is a normative one. This categorisation of growth centres was developed by W. Alonso and E. Medrich (1972), "Spontaneous Growth Centres in Twentieth-Century American Urbanisation", in N.M. Hansen ed., Growth Centres in Regional Economic Development, The Free Press (MacMillan), New York, pp. 229-265.

(Berry, 1969: 288).

These "trickle down" or "spread" effects have been particularly attractive to the regional planner and have contributed much to the recent popularity of the theory as a policy tool (GTasson, 1974: 147). Yet, despite this, there has been a remarkable lack of studies on whether or not the growth of growth centres does in fact spread to their hinterlands (Hansen, 1973: 17; Richardson, 1976: 2).

The spatial impact of growth centres is an important subject for three reasons (Moseley, 1974: 114-115). First, many theoreticians have incorporated the notion of spatial impact into their definitions of the term. For example, Boudeville (1966: 11) defined a regional growth pole as a "set of expanding industries located in an urban area and inducing further development of economic activity throughout its zone of influence;" and Nichols (1969: 193) used the definition, "an urban center of economic activity which can achieve self-sustaining growth to the point that growth is diffused outward into the pole region and eventually beyond into the less developed region of the nation."[3] Second, the assumption that growth centres do benefit much wider areas appears implicit in public policies designed to stimulate extensive development by concentrating upon a few favoured places. Indeed, the political acceptability of such discriminatory policies may in part rest upon the notion of spatial impact. The third justification for a careful examination of the impact notion concerns our

---

[3]The term "growth pole" is explicity used here in a geographical sense and therefore can be regarded as being synonymous with the term "growth centre". However, the reader should be aware that the terms are generally not synonymous since growth poles imply growing economic sectors while growth centres refer to growing places. See, for example, Darwent, D.F. (1969), Growth poles and growth centres in regional planning - a review, Environment and Planning, Vol. 1, No. 1, pp. 5-32.

general level of ignorance on the subject. Hoover, having made the point that "the idea is that economic improvement initiated in the growth centers will spread to their less urbanised hinterlands...." continues, "(but)" actually we do not yet know much, particularly in quantitative terms, of the way in which a favourable economic effect is propogated from an urban growth center to the surrounding territory, or the range and speed of the various impacts" (Hoover, 1969: 352).

The answer to this question whether or not growth will diffuse outward into the surrounding region must be sought in an investigation of the processes by which such impact may take place and of the spatial patterns or forms which theory suggests might be produced (Nichols, 1969: 194; Moseley, 1973a: 58). "In essence the growth pole model depicts the transmission of economic prosperity as the result of two sets of opposing forces. On the one hand, growth tends to concentrate in some centre and erodes the economy of surrounding areas; on the other hand, development spreads over surrounding areas as the result of growth in the centre," - all this in the "area in which the centre and surrounding interact, the growth space" (Robinson and Salih, 1971: 303). Thus the relative strength of these two opposing forces of backwash and spread determines the level of development at any one point in the growth space. This duality is clearly described in the "centre-periphery" or "cumulative-causation" models developed particularly by Hirschmann (1958), Myrdal (1957) and Friedmann (1963, 1966, 1969) - these models providing the best conceptual framework and theoretical consideration of the relevant processes.[4]

[4]Myrdal's terms spread and backwash are analogous to Hirschmann's terminology of trickling down and polarisation (Hirschmann, 1958: 187-190).

Although there appears to be enough theoretical literature on spread or trickle down effects, very few case studies are available. The reason for this seems to be the lack of statistical data and a suitable method for quantifying the spread effects of the growth pole (Waller, 1972: 289). In those studies which have examined the issue of spread effects of growth centres upon a surrounding territory (Nichols, 1969; Berry, 1970; Odland, Casetti and King, 1973; Moseley, 1973b), conclusive results have not emerged to date. Utilizing data on percentage variation in median family income for counties in Georgia between 1950 and 1960, Nichols attempted to index change in per capita income with rising population, both variables being linked to expanding employment opportunities at the various growth centres. By using the spatial pattern of residuals from a regression of change in income upon change in population, she found that disproportionate increases in income clustered around major cities, implying increased commuting of a pre-existing population to higher wage jobs in the cities, and thus demonstrating a spread effect in the commuting zone. A similar distance-decay pattern was found using retail sales volume in small midwestern towns; sales volume had increased in zones closer to larger cities, implying rising buying power in these areas (Odland, Casetti and King, 1973: 79). A study examining rural Britain is more comprehensive, utilising an index of economic welfare based on factor scores derived from a large set of variables via a factor analytic technique (Moseley, 1973b). The results suggest that: (1) above average growth, and consequently positive spread effects have predominated within about 32 kilometres (20 miles) of large centres, followed by a trough of below average growth -- again indicative of the influence of commuting; and

(2) centres over 25,000 consistently had a significant impact on the growth surface, while smaller centres in the range of 10,000 to 25,000 had impacts in some cases. In a study which utilised a series of transects across the United States as evidence, Berry (1970: 4) concluded that there were definite gradients of distance-decay indexing economic health within commuting fields of large urban complexes, but that centres below 25,000 have had little impact on this patterning.

It is clear from these studies that, while some evidence does exist concerning the "fields of influence" of urban centres as it relates to the economic welfare of surrounding regions, there is little in the way of demonstrating the spatial spread of growth from growing centres as Hansen has stated. An excellent synthesis of studies which have investigated the impact of growth centres upon their hinterland appears in a recent article by Stöhr and Todtling (1977: 46-47). They indicate that such studies have shown that:

(1) Spread effects from growth centres were usually smaller than expected, or less than backwash effects and therefore had a negative net result on the hinterland. They were narrowly limited in geographical extent, usually restricted to the commuting area, often as a function of the size of the centre; (see, for example, Morrill, 1972; Gaile, 1973).

(2) Increases in income of lower order centres or rural areas create strong income multipliers in higher order centres but not the other way round; (see, for example, Nichols, 1969; Moseley, 1973a, 1973b, 1974; Gilbert, 1975).

Therefore, in the context of policies for broad spatial

development, it seems difficult to justify growth-centre strategy due to the apparent lack of spread effects in the urban hierarchy downward or from the growth centre to a broader hinterland.

The present research is firmly in the context of both growth centre development and the measurement of spatial spread effects from a growth centre, trickling down to the surrounding hinterland. Specifically, the study embraces a mechanism, namely commuting, by which spread effects from a spontaneous growth centre - the City of Edmonton - benefit its hinterland. The journey to work is potentially an important spread mechanism as commuters may transfer earned income to satellite communities, thus generating further economic activity in the retail trade and service sector particularly, by their expenditures (Hale, 1967: 442; Morrill, 1972: 215; Parr, 1973: 204; Moseley, 1973b: 79, 1974: 144; Erickson, 1977: 294). This aspect of commuting, however, is an area where there has only been slight empirical testing of theories concerning the spread effects from growth centres. And there have certainly been no estimates of the extent of generated economic benefits in specific peripheral communities using micro-data (Erickson, 1977: 283).

Commuting can be placed in the traditional framework of basic and non-basic industries (Lamb, 1975: 9). Income earned in the metropolis by commuters can represent substantial transfer payments to the hinterland communities, and in this sense, commuting serves as a basic or export industry bringing capital into a community, which then benefits by multiplier effects. Of course, when consumers do decide to make purchases locally, only a part of the sales dollars created will remain in the local economy in the form of wages, salaries, rents,

profits, etc. and this becomes income for another consuming unit. Another round of local income generation then begins. This process of income generation is known as the "local multiplier".

In order to calculate the economic impact of local consumption expenditures by commuter families on the local economy, it is necessary to determine the local propensity to consume.[5] To do this, however, one is immediately confronted with the question of why households purchase where they do. The concern is not so much with the items being purchased or even with when the purchase is being made; rather it is with those variables which influence the process a household goes through when deciding whether a particular purchase is to be made in the community of residence or elsewhere (Boehm, 1972: 7-8; Boehm and Pond, 1976: 7). The outcome of this process is obviously of crucial importance for local income generation.

C. The Location-of-Purchase Decision

The household may be viewed as a decision-making organization since each household unit makes purchase decisions based upon certain criteria as does a business firm. The wants and desires of family members dictate these criteria. Households then seek to maximise the satisfaction accruing to members by fulfilling as many of those wants and desires as possible subject to a budget constraint. Therefore, given a fixed income and facing fixed prices, a household unit must make certain allocation decisions regarding what items are to be purchased, when should the actual pruchase take place, and where the purchase will be made. Since individual consuming units are making these decisions, they signal producers to increase, decrease or stabilise the production

[5]The term "propensity to consume" is interpreted as the spatial propensity to consume (that is, the small town versus the City) and not as the economist's interpretation which is the ability to consume relative to a change in income.

of certain products. Furthermore, largely through the location-of-purchase decision, they also help determine the economic fate of individual retailers and groups of retailers (Boehm, 1972: 7; Boehm and Pond, 1976: 7).

According to the theory of consumer behaviour, the demand for a product is a function of its own price, the price of all other goods, and the consumer's income. However, at any given point in time, prices will be fixed in each market so that each household views identical prices. Since households do not necessarily purchase in the same market, it can be concluded that different consuming units do not view prices identically. Somehow, the costs of transportation, shopper frustration, more or fewer alternative choices, et cetera are implicitly included in the prices they observe. In addition, doubts must be cast upon the ceteris paribus assumption which may be seriously violated when the purchase decisions of various households are considered. Other things are not necessarily equal among consumers and consuming units. As Moore and Mason (1969: 63) have stated,

> "Research has demonstrated that market areas are irregular and that consumers are less than or more than 'economic men' in their purchase decision."

Therefore, it is necessary to proceed beyond the limited concepts of price and income in searching for variables which influence the location of purchase decision. Previous research (for example, Russell, 1957; Collazzo, 1963; Frank, 1967) has suggested that consumer demands developed for particular products in particular markets in one period of time may be somewhat homogeneous if certain socio-economic and demographic characteristics of the consuming units are taken into

consideration.

The proceeding section deals with a set of six socio-economic or demographic household characteristics which are considered influential in altering the location-of-purchase decision. While the first four are those generally considered in studies of consumer purchasing, comparatively little attention has been given to the influence of the length of residence and the location of employment. Length of residence has been included in the study since many of the residents in the surrounding metropolitan municipalities and country residences are recent migrants from the City of Edmonton. This will also help to determine to what extent previous residence has influenced consumer purchasing patterns. Location of employment will account for differences in the location of purchases which may be attributed to the variable degree that consuming units rely upon the community of residence for their livelihood.

i. Income

Although the important role of the income variable in consumption studies has long been recognised (Jonassen, 1955; Henderson and Quant, 1958; Ostheimer, 1958), it is only recently that the influence of this variable has been associated with the purchase location decision. For example, Herrmann and Beik reported that:

> ".....the proportion of respondents who shopped out of town was found to be higher in the middle to upper income households."
>
> (Herrmann and Beik, 1968: 47)

This finding was confirmed in a later study by Thompson (1971: 75).

A study by Boehm (1972: 57) concluded that the effects of income

on local purchasing tends to be curvilinear. As total incomes increase, total expenditures will increase. Initially, more will be purchased in the local economy. However, in order to obtain a wider selection of retail purchases, made possible by increased income, the consuming unit will initiate a search procedure expanding its effective market area. Therefore, policy makers and local retail merchants should realise that as local incomes increase, local retail purchasing may well increase at a decreasing rate.

It is therefore hypothesised that a negative relationship exists between income and the proportion of expenditures made locally. As income increases, families will spend a smaller proportion of their expenditures in their community of residence.

ii. Educational Level of Household

The educational level of the household unit also affects the purchase location decision. The particular contribution of this variable as an aid to understanding consumer buying patterns has been widely publicised (Jonassen, 1955; Watts, 1958; Frank, 1967). It is hypothesised that those family units within the higher educational strata will depend on the local retail sector to a lesser degree than those within the lower strata. This view is supported in a study by Collazzo who concludes:

> ".....the need to visit several stores in the same shopping centre seemingly bothered those with primary or secondary school education more than it did those who go beyond high school."
>
> (Collazzo, 1963: 18)

Ostheimer (1958: 266-267) reported that even though there is a close relationship between income and educational level, income does not

explain all the association between spending and education. Holding the effect of income constant, there was still a wide variation in purchase pattern. As educational level varies, families alter both the market basket and the shopping attitude - both of which may contribute to variations in purchasing location.

It may be hypothesised, therefore, that a negative relationship exists between the educational level of the household and the proportion of expenditures made locally. As the educational level of the household rises, the proportion of expenditures made in the community of residence will decline.

iii. Family Size and Age-Sex Distribution

Family units vary by size and age-sex composition. In this study, these two effects are taken into consideration simultaneously by using the number of adult-equivalent units per household. Previous research has shown that the mere presence of young children in the household effectively alters the consumption pattern of the family, both in what is purchased as well as where those purchases are made since mobility, which is required to shop outside the local community, may be limited. Therefore, a very large family may find it necessary to increase shopping time and effort in order to take advantage of bargains which reduce the total dollar purchase for a specific market basket of goods. Herrmann and Beik (1968: 47) report that out-of-town shopping tended to be less common among families with young children, but numbers alone did not seem to exert an influence until three or more were present.

From the foregoing, it can be hypothesised that as adult-

equivalent units increase, based on both family size and age-sex composition, a decrease in the proportion of expenditures made locally will be observed.

iv. Occupational Status

Previous research by Fisk (1963: 124) and Collazzo (1963: 13) suggest that occupational status of the household as a variable aids in the prediction of consumer purchase patterns. Families within higher occupational strata report that the need to visit several stores, in order to obtain the desired goods, is much less frustrating than results reported by lower occupational strata. Following a Veblenistic point of view (Veblen, 1934), it may also be proposed that those in the upper occupational strata will choose to broaden their effective market in order to purchase those items not generally available in the local community.

Despite this, relationships between local shopping and occupational status are still not yet firmly established. Both Herrmann and Beik (1968: 47) and Thompson (1971: 75) in studies which attempted to describe the movement of shoppers outside their local retail area, could not find significant differences in shopping patterns between the various occupational categories.

The inclusion of the variable in this research study will, therefore, be somewhat exploratory. A priori, it is hypothesised that a negative relationship exists between total local purchases and occupational status. Given that all other things are equal, a professional man and his family should purchase less in the local community - economy than a labourer, probably because wants and desires differ

greatly.

V. Length of Residence

When people change the locations of their homes, they change their relative position within the spatial distribution of the functional nodes offering goods and services. Thus, migration behaviour should result in comsumers reassessing the utility associated with establishments that they normally patronise. This reassessment may result in a total or partial change in the recent migrant's activity patterns. According to Lloyd (1977: 14), migrants will tend to break with functional nodes in an ordinal sequence breaking with lower-order nodes (such as grocery stores and gasoline stations) first and higher-order nodes (such as department stores) last.

Golledge and Brown (1967) have applied some elements of learning models (for example, Bush and Mosteller, 1955) to a slightly different situation (that of an industrial producer searching for customers in an unfamiliar area), but their conclusions can be related to the topic under discussion here. They hypothesised that "search activity" (visiting different stores and shopping centres in succession, followed by a number of repeat visits for further comparison) is eventually replaced by "habitual response" in which particular stores and centres are frequently visited. For one good, groceries, this process was found to take approximately three weeks. This assumes, of course, no major addition to the retail system and no major additional inputs of information about the existing retail system. Bell (1970) in a study of mobile population examined the number of weeks taken to rebuild shopping patterns. He also found that the process of adjustment was

rapid, varying from one week for the selection of a supermarket to nine weeks for choosing a dentist.

Obviously each consumer has a particular set of attitudes to searching through time, and some will decide to stop searching much sooner than others. Also, some may wish to continue using outlets familiar from their previous pattern of residence. For example, Nader (1968: 72) found that on a housing estate in County Durham, England, those who had moved from Sunderland only 8 kilometers, or 5 miles away, carried out twice as much shopping in Sunderland as those who had moved from other areas. Similarly, Burnett (1973: 195-197) showed that housewives interviewed in a suburb of Sydney, Australia, who had lived there for several years, chose to shop in quite a different manner from those who had recently moved into the area. The new arrivals applied their previously acquired knowledge of the general properties of shopping centres to the new unfamiliar pattern of local centres. This behaviour may well be evident in the present study since a large proportion of families living in the surrounding metropolitan municipalities and acreage subdivisions are former residents of the City of Edmonton.

vi. Location of Employment

The concept of including some measure of local economic dependency as a variable altering the purchase location is not entirely new, even though its inclusion has been somewhat haphazard and non-specific in the past (Boehm and Pond, 1976: 8). Moore and Mason (1969: 61) attempted to test the hypothesis that patronage of three major retail centres was strongly influenced by social class perception.

Probably their greatest contribution as far as this research effort is concerned, was to point out that the socio-economic variables do not satisfactorily explain retail centre patronage decision of residents within the study area. Although they suggest social class perception as perhaps the most important variable, there is no strong evidence supporting this claim. These same authors, in a subsequent article (1970: 189), again review the inadequacy of the reliance upon socio-economic variables in explaining retail patronage. They mention in passing the "place of work - place of residence" problem in studies of regional economics, discussed by Floyd (1969: 2), but do not develop the topic by relating it to retail purchasing.

Since occupational status and social class perception are closely related and previous research has failed to specify the effect of occupational status upon purchasing patterns, it seems appropriate to search for another variable, one closely associated with employment, in order to more completely explain observed purchase patterns. It may well be that the effect on purchasing attributed to social class perception by Moore and Mason was more accurately a reflection of the particular purchase location decision resulting from an employment location factor. In other words, farmers may have been purchasing at locations where other farmers shopped merely because in daily contacts (associated with their work) retail purchasing was discussed. This view was supported by Press (1962) in his study of residents in a Michigan township near Lansing. He found that "farmers with full time off farm jobs tended to do their retail shopping, attend church and obtain medical services in the metropolis or its suburbs rather than in

nearby rural trade centers" (Press, 1962: 1).

Boehm (1972) presents further support to the hypothesis that employment location and location of purchase are related in a study of the purchasing behaviour of rural non-farm residents in two small (2,500 population) southern Indiana communities. In an effort to more clearly identify and interpret those socio-economic variables and demographic characteristics most influential in determining differences in the purchase location decision made by residents in small rural communities, a theoretical model was developed (Boehm, 1972: 14). The model, represented functionally, appears below:

$$Y_i = (I, S, E, F, O, L)$$

Where Y_i is the tendency of a particular consuming unit to purchase the i^{th} product; I is the total purchasing power of the consumer unit; S is the adult life-cycle stage of the family; E is the educational level of the family; F is the age-sex composition of the total household; O is the occupational status of the household; and L is the employment location. This theoretical location-of-purchase model was transformed into a statistical model to make possible the estimation of coefficients which would indicate both the magnitude and direction of impact of each independent variable upon the dependent variable. The statistical model in general form is summarised below:

$$Y_i = \beta_o + \beta_1 X_{1j} + \beta_2 X_{2j} + \ldots\ldots + \beta_k X_{kj} + \varepsilon_j$$

where Y_i is the total annual retail expenditure made in the community of residence by the household for the commodity class being considered; X_{1j} is total annual expenditure (external and internal) for all items in the market basket by the j^{th} household; X_{2j} is the age in years of the household head; X_{3j} is the location of the principal wage earner's

employment in miles from the community of residence; X_{4j} is the education in years of the household head; X_{5j} is the number of equivalent adults in the j^{th} household unit; X_{6j} is the occupational classification of the household head; β is the parameter to be estimated for each of the independent variables; ε is the Stochastic error term; and j is (1, ..., 155), the j^{th} observations of the dependent and independent variables. A questionnaire was developed in order to collect the data required to estimate coefficients of the model. The data were then stratified by employment location and each of the other independent variables in order to test whether differences in the independent variables could be attributed to differences in employment location. An analysis of mean expenditures for the group locally employed and the group externally employed indicated that a statistically significant relationship exists between employment location and the location of retail purchases. Households employed at locations outside their community of residence tend to spend less annually on retail items from local merchants than do households employed locally. Certain policy implications are suggested by these findings, the most obvious of which is that local business groups involved in projects designed to attract additional employment opportunities are quite right in thinking that local job opportunities will lead to increased retail sales. On the other hand, if rural residents are encouraged to seek employment in nearby medium to large size cities and yet continue to maintain residence in rural communities, this may well lead to an overall reduction in purchasing in rural community retail trade sectors. To the degree that these purchases are subject to the multiplier effect,

local economic expansion is therefore reduced.

As local retail sales dwindle, a traditionally important source of local tax funds, local business property taxes, will also dwindle. Consequently, if local residents wish to maintain and/or increase local public services without a local industrial base, alternative sources of tax funds must be found. Thus, the interrelationship between local retail sales and local employment availability appears to shed additional light on the question of whether local industrialisation is necessary for local economic growth. Communities without local employment may find themselves facing increasing costs of public services without the traditional sources of tax revenues.

D. Spatial Distribution of Expenditures

Having discussed some of the more important factors which influence the location-of-purchase decision, attention can now be directed toward those studies which have examined the pattern of expenditures made by commuter families, in the place of their residence, en route during the journey to work or at the location of their employment. As mentioned earlier, there has been virtually no research into this aspect.

Zikmund (1971: 193) in a study conducted in Radnor Township, Pennsylvannia - just outside of Philadelphia, found that commuters were more likely to use central city facilities - entertainment, shopping, cultural activities, etc. - than were residents who do not work in the city. Unfortunately, these findings were based solely on the frequency of use of facilities and thus give no indication of the proportion of the commuter's family income spent in the city. Morrill (1972), however,

does tentatively examine this question. He suggests that there is a direct relationship between distance and the proportion of income that commuter families spend in their area of residence versus the city. He indicates that commuters just beyond the built-up area will do most of their buying at suburban shopping centres since strong competition from these centres means that the per-capita level of retail and service activity in this inner commuter zone will be rather low. As a result, expenditures made in the local area will vary from about one half to about equal those made in the city. However, in the further commuter zone (16 to 48 kilometres, or 10 to 30 miles, out from the edge of the built-up area and where the proportion of the labour force commuting is from about 2 percent to 20 percent), the density of commuters falls rapidly, but a greater proportion of income becomes transferred to the local economies. Accordingly, the absolute per capita level and quality of goods and services in this zone will tend to rise.

Morrill (1972: 224-225), in fact, suggests that the direct relationship between distance and the proportion of income spent in the area of residence may be expressed by the following simple and direct form:

$$\text{Proportion of Income Spent Locally} = 0.15 + \frac{\text{Distance (miles)}}{60}$$

that is, by a distance of 50 miles (80 kilometres) almost 100 percent is spent locally; at 20 miles (35 kilometres), 50 percent, etc. The author, however, presents no evidence of suggest that this relationship has been based upon empirical data. It is certainly a very broad generalisation of a geographical pattern which in all probability is much more complex in the real world.

Moseley (1973b) has also addressed the problem in a study of the impact of two growth centres, Thetford and Haverhill, in East Anglia, England. An attempt is made to discuss whether the multiplier effects created by their purchases do "trickle down" to the smallest and most distant settlements, or is some other process likely to be at work? Commuters to these towns were asked where they shopped for groceries, shoes and electrical appliances[6], and replies were summed by destination of shopping trip.

Results indicated that about 75 percent of the workers in each town bought "convenience" goods in the growth centre and 50 percent also bought most of their "durables" there. Trips away from the growth centres were primarily to larger centres such as Norwich, Cambridge, and Bury St. Edmunds, or else, to a lesser extent, to the ring of small towns 10-26 kilometres (6-16 miles) away where some commuters bought some convenience and durable commodities. Overall, multiplier effects created by these purchases seem to have benefited: (1) the growth centres themselves; (2) the large regional centres 9-48 kilometres (12-30 miles) away; (3) the ring of small towns; and (4) the neighbouring villages. It seemed that very few commuters spent substantial amounts in the village shops and that generally trips away from the growth centre were made only in order to benefit from the greater attraction of the larger centres. Thus, the overall spatial pattern accords very closely to central place theory since the "leakage" from the growth

[6]Shopping for groceries was deemed to reflect "convenience" shopping, while shoes and electrical appliances were used to indicate "durable" shopping.

centres in the generation of activity in the service sector has largely bypassed the villages and small towns.

And so, in the author's opinion, severe doubts must be cast on the notion that "growth impulses.....trickle down." Certainly the expansion of the two small growth centres has improved the choice of employment and presumably the prosperity of many residents of the small towns and villages surrounding them, but in terms of the generation of supplementary economic activity such impulses appear to have "trickled up" (Moseley, 1973b: 93).[7]

E. Impact of Residential Dormitory Development on Commercial Property

The final step in the study will be to consider that proportion of the commuter family's income spent locally in order to estimate the impact of these expenditures on local commercial development. Again, there has been virtually no research into this aspect. Although the impact of housing development on commercial properties has received considerable attention, the successful measurement of the relationship between expenditure patterns and commercial property values and hence potential tax revenues, has been limited (Hellman, 1974: 25). A dollar benefit has been implied but never measured. As a result, there may be a serious underestimation of the revenues to small towns and counties from residential dormitory development.

In order to estimate the level of additional demand for goods and

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[7] Moseley (1973b: 93) does, however, point out that these conclusions do relate to the impact of what are really quite small growth centres. Large centres may be much more effective as sources of "trickle down".

services generated by the construction of new housing units, it is necessary to make corrections for differences in the spending patterns of new residents, determine the location (in which community) of the additional spending, and translate the increased spending into commercial property requirements with adequate recognition of existing capacity. Hellman (1974: 25-28) and Muller (1975: 29) have outlined procedures for accomplishing this, whereby data on the household income of new residents can be converted into estimates of increases in the square footage of commercial space required, and resulting additional net prosperity and sales tax revenues.

The use of broad aggregate data in these studies, however, casts serious doubts upon the reliability of their estimates. In the present study, therefore, emphasis has been placed on the collection of data of a more disaggregate nature in order to calculate the impact of commuter expenditures upon the local retail sector. Unfortunately, because of limited data available, it is only possible to derive some crude estimates of this impact.

IV. Hypotheses

From the preceding discussion, and the specific problem outlined, the following hypotheses were formulated:

Hypothesis 1. By absolute value of expenditures, the largest proportion will be located in the City but that relative to the value of receipts for sales and services, the expenditures made in the small towns will be larger.

Hypothesis 2. The local propensity to consume will vary according to the type of good or service demanded.

Hypothesis 3. The extent to which retail and service facilities are used in Edmonton will vary by the socio-economic status of the commuter.

Hypothesis 4. The length of residence in a small town or rural acreage subdivision is positively related to the stability and amount of local expenditures and hence that over time, the impact of expenditures on small town development will increase.

Hypothesis 5. A statistically significant relationship exists between the location of employment and the location of expenditures. Households externally employed will spend less in their community of residence than those who are employed locally.

The analysis is intended to provide a basis for evaluating current policy and for developing specific policy guidelines for the development of small urban centres within the Edmonton metropolitan region.

V. Organisation of the Thesis

The present chapter has provided an outline of the research problem. Some of the theoretical and empirical issues regarding the spatial impact of growth centres have then been presented, together with an examination of the location-of-purchase decision. This review of the literature has served as a basis for generating relevant and testable hypotheses relating to the measurement of the spread effects from the City of Edmonton, via the expenditure patterns of commuter families, to the hinterland of Edmonton.

Chapter Two is concerned with the study area. The chapter provides a brief overview of recent patterns and trends of population distribution within the Edmonton metropolitan region. Attention is then directed toward the delimitation of the study area and to the criteria used in the selection of the urban municipalities. A descriptive presentation of each of the selected municipalities follows. The final part of this chapter examines the extent to which both the subdivision and the development of land for country residential purposes has occurred through space and time with a view to selecting the rural municipalities for study.

Chapter Three deals with the research methodology employed in the collection and analysis of the data. Problems of interview procedures, the design of the household questionnaire and the expenditure diary, sampling procedure and survey procedure are discussed. An outline of the methods of analyses used in the study concludes the chapter.

Chapter Four presents the results of the analysis. The first part of the chapter is concerned with the identification of various socio-economic and demographic characteristics peculiar to the commuter and country residential populations. A detailed examination of the spatial distribution of expenditures then follows, together with a discussion of the factors influencing these patterns.

Chapter Five is the concluding chapter and synthesises the major findings of the thesis. This is followed by a review of the methodological procedures employed in the study with a view to making possible recommendations for changes in these techniques. The practical and theoretical implications of the research findings are then discussed. Finally, suggestions are made regarding possible areas for further research.

CHAPTER TWO

STUDY AREA

I. Introduction

Canada is both one of the most urban and one of the most rapidly urbanising countries in the developed world. In 1961, when Canada's population was 69.9 percent urban, it was already ranked eighth in the world. Only the United States and some western European countries were more highly urbanised. Today, three out of four Canadians live in urban places and one in two live in Census Metropolitan Areas, our largest urban places with populations of over 100,000. For a number of historic and economic reasons, most of these rapidly expanding urban centres are situated in eastern Canada, but two of the fastest growing, Calgary and Edmonton, are located in the Province of Alberta.

II. Population Growth in the Edmonton Metropolitan Region

The population of Alberta, not unlike the rest of Canada, has become increasingly urbanised during the period 1961 to 1976; whereas the average annual growth rate of the province during this period was 2.5 percent overall, the urban population grew by 4.2 percent.[1] The rising level of urbanisation was illustrated by the increased proportion of the population residing in urban centres: in 1961, 63.3 percent of the population was classified as urban and by 1971, this

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[1] Census of Canada, Population: Urban and Rural Distributions, Catalogue 92 - 807, Vol. 1, Part 1, Bulletin 1.1.8. February 1978, p. 9-12. Census of Canada, Population: Urban and Rural Distributions, Catalogue 92-536, Vol. 1, Part 1, Series 1.1, Bulletin 1.1-7, February 1963, p. 14-12.

proportion had increased by almost 12 percent to 75.0 percent.[2] Although the rural component of the population has declined in most areas, there have been some radical upward fluctuations in the populations of rural municipalities in close proximity to the large urban centres. Table 2.1 illustrates the extent to which this has occurred in the Edmonton area. Today, much of the area's residential growth is occurring outside the corporate limits of the City.

The preference of a segment of population for residing outside the City was evident in the mid-1950's with the early growth of St. Albert and Sherwood Park - despite at that time the relative parity of land prices within and outside the City of Edmonton and despite less than satisfactory travelling conditions between the City and suburban towns. The upgrading of the highway network within the metropolitan region, improved municipal services in suburban towns, and their economic advantage in terms of land costs, have accelerated the pattern of decentralisation. For example, the community of Sherwood Park increased from 2,923 persons in 1961 to a population estimated at 26,500 persons in 1977; Spruce Grove from a hamlet of 300 people has grown into a community of 7,137 people by 1977. Similar growth was experienced in other metropolitan municipalities such as St. Albert, Leduc, Fort Saskatchewan and, to a lesser extent, Stony Plain. As a result, Table 2.2 indicates that the percentage share of the metropolitan region's population growth that has concentrated in the City has steadily diminished from a high of 96.3 percent in the 1951 to 1956 period to only 42.4 percent in the 1971 to 1977 period.

While most of the growth in recent years has occurred in urban centres with populations greater than 1,000 persons, the table does

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[2] Ibid

TABLE 2.1

Population Growth of Edmonton Metropolitan Area Municipalities Between 1951 and 1977

	1951	1956	1961	1966	1971	1976	1977
City of Edmonton[1]	170,929	246,561	320,598	376,925	438,152	461,361	471,474
Sherwood Park	-	-	2,923	8,339	14,282	26,166	26,500[E]
St. Albert	1,129	1,320	4,059	9,736	11,800	24,129	25,543
Fort Saskatchewan	1,076	2,582	2,972	4,152	5,726	8,304	9,586
Leduc	1,842	2,008	2,356	2,856	4,000	8,576	9,128
Spruce Grove	-	309	465	598	3,029	6,907	7,137
Stony Plain	878	1,098	1,311	1,397	1,770	2,717	3,040
Devon	842	1,429	1,418	1,283	1,468	2,786	3,100
Morinville	892	957	935	995	1,475	2,097	2,198
Calmar	944	730	700	600	799	872	960
Gibbons	-[2]	-[2]	192	230	551	1,093	1,112
Legal	523	457	524	472	563	874	934
Thorsby	385	411	419	583	595	657	735
Beaumont	-[2]	-[2]	194	234	337	851	1,045
Bon Accord	-[2]	141	175	147	332	882	916
New Sarepta	-[2]	-[2]	184	173	202	237	240[E]
Total	179,440	258,003	339,425	406,820	485,081	548,843	563,648

Notes: E Estimate

(1) City of Edmonton population figures for 1951, 1956 and 1961 include the communities of Beverly and Jasper Place which were annexed to the City at a later date.

(2) Population figures are not available.

Source: Edmonton Regional Planning Commission Annual Reports.

TABLE 2.2

Percentage Share of "Urban" Sub-Region Population Growth, 1951-1977

	1951 to 1956	1956 to 1961	1961 to 1966	1966 to 1971	1971 to 1977
City of Edmonton	96.3	90.9	83.6	78.2	42.4
Sherwood Park and St. Albert	(1)	(1)	13.5	12.8	33.0
Other communities over 1000 population (1971)	(1)	(1)	2.7	7.9	21.3
Communities less than 1000 population (1971)	(1)	(1)	0.2	1.1	3.3

Note: (1) Data not available in suitable format.

Source: Edmonton Regional Planning Commission Annual Reports, 1951 through 1977.

reveal that considerable growth has also taken place in smaller rural communities. For instance, Ardrossan, a small centre sixteen kilometres (ten miles) east of Edmonton, has experienced a large increase in population in the last two decades. Wernerville, Strathcona Heights, Queensdale Place, Lindale, Hulbert Crescent, Jurstwood Park, all country residential subdivisions which showed no recorded population prior to 1966, have experienced considerable growth. As these subdivisions are all located within twenty-four kilometres (fifteen miles) of Edmonton, it is evident that significant increase in the

rural non-farm population[3] have also occurred in the countryside adjacent to the City in recent years.

This centrifugal migration of the population has been the focus of much study during recent years regarding what is occurring and why. Generally, it is agreed that the trend is a result of a rural pull and an urban push, where various negative factors in the City such as pollution, congestion of streets, crowded housing, politics and high land prices, tend to "push" the urbanite away from the source of these perceived ills. On the other hand, amenities perceived in smaller centres or rural areas, such as open space, quiet surroundings, natural environment and privacy, together with the absence of the negative factors in the City, "pull" the urbanite outward to the smaller centre or country residential subdivisions (Alberta Land Use Forum, 1974: 53).

Yet, although the City of Edmonton has in recent years lost its dominance as the location of population growth within the region, it is significant to note that much of the growth which has occurred between 1971 and 1977 has still been in close proximity to the City, that is, within 50 kilometres (30 miles). Indeed, 75 percent of the total urban population increase during this period occurred in the City of Edmonton, St. Albert and Sherwood Park.

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[3]The rural non-farm category of the population includes three distinct sub-populations:

(1) Those persons living in small unincorporated centres with a population of less than 1,000 persons;

(2) Those people living on small acreage allotments whose prime source of income is derived from activities not related to agriculture; and

(3) Those people residing in rented farmhouses whose prime source of income is derived from activities not related to agriculture.

Source: Census of Canada. Dictionary of the 1971 Census Terms, Catalogue 12-540, December 1972, p. 29.

Furthermore, the proceeding discussion indicates that, despite this decentralisation trend, the City of Edmonton continues to exert a major economic influence particularly in the immediately surrounding area.

III. Influence of Edmonton Over Its Hinterland

Situated at the centre of a well-established transportation network, the city plays a dominant role as a supplier of goods and services, as an administrative centre, and as a financial and government centre. This economic dominance has had significant repercussions on the surrounding municipalities.

Although the City of Edmonton has, in recent years, received a declining share of the metropolitan region's population growth, its commercial and industrial dominance has been almost entirely retained as most of the region's working population is employed in the City. Edmonton's function as a centre of supply for various goods and services is strongly reflected in the many economic ties which exist between the City and its surrounding communities. The strength of these ties varies from virtually complete economic integration, in the case of Sherwood Park and St. Albert, to, what has been until recently, near self-sufficiency in Stony Plain and Morinville, where the main effects are expressed in retail trade and the supply of business services.

The primary function of most small town businesses is to supply goods and services to purely local populations, either in the communities themselves or in adjacent trade areas. As a result, demand is often relatively small and this, together with the fact that there is a ready supply of goods and services in Edmonton, means that the municipalities are served and supplied directly from the City.

This has been most prominent in retail trade and the supply of business services. Edmonton's businessmen have continued to be competitive despite the recent rapid growth of the metropolitan municipalities and the establishment of new local facilities. Clearly, then, proximity to the City has had an inhibiting effect on the establishment of new local commercial facilities and constitutes a genuine problem for many small town businessmen. Therefore, each municipality, being dependent on the City in some respect, may be considered a "satellite", though, of course, the term is much less applicable to some communities than to others.

In other respects, however, the City has generated great activity in the neighbouring municipalities, notably through metropolitan expansion which was triggered by regional oil and gas development beginning in 1947. The immediate consequences of this development involved the founding of the new town of Devon as an oil-field service centre and led to the rapid growth of population and industry in Edmonton; a few years later, natural gas reserves were instrumental in the establishment of large industries in Fort Saskatchewan. Urban development spread beyond the City's corporate boundaries and initiated the development of two new residential satellites, St. Albert and Sherwood Park, while two older satellites, Beverly and Jasper Place, were amalgamated with the expanding city. This residential expansion has continued over the years, as each metropolitan municipality is, to a varying degree, performing a dormitory function.

The purpose of the next section is to define the area in which the influence of the City of Edmonton over its hinterland is strongest. This is by no means an easy task on account of the fact that this

influence tends to be both extensive and varied.

IV. Delineation of the Study Area

The method selected for this study is based on Edmonton's function as an employment centre since, in this capacity the City's influence is rather evenly distributed in all directions due to a well-developed transportation network. Furthermore, the function is restricted in its areal extent primarily by travelling time and, in theory at least, the influence tends to diminish smoothly with increasing distance from the City.

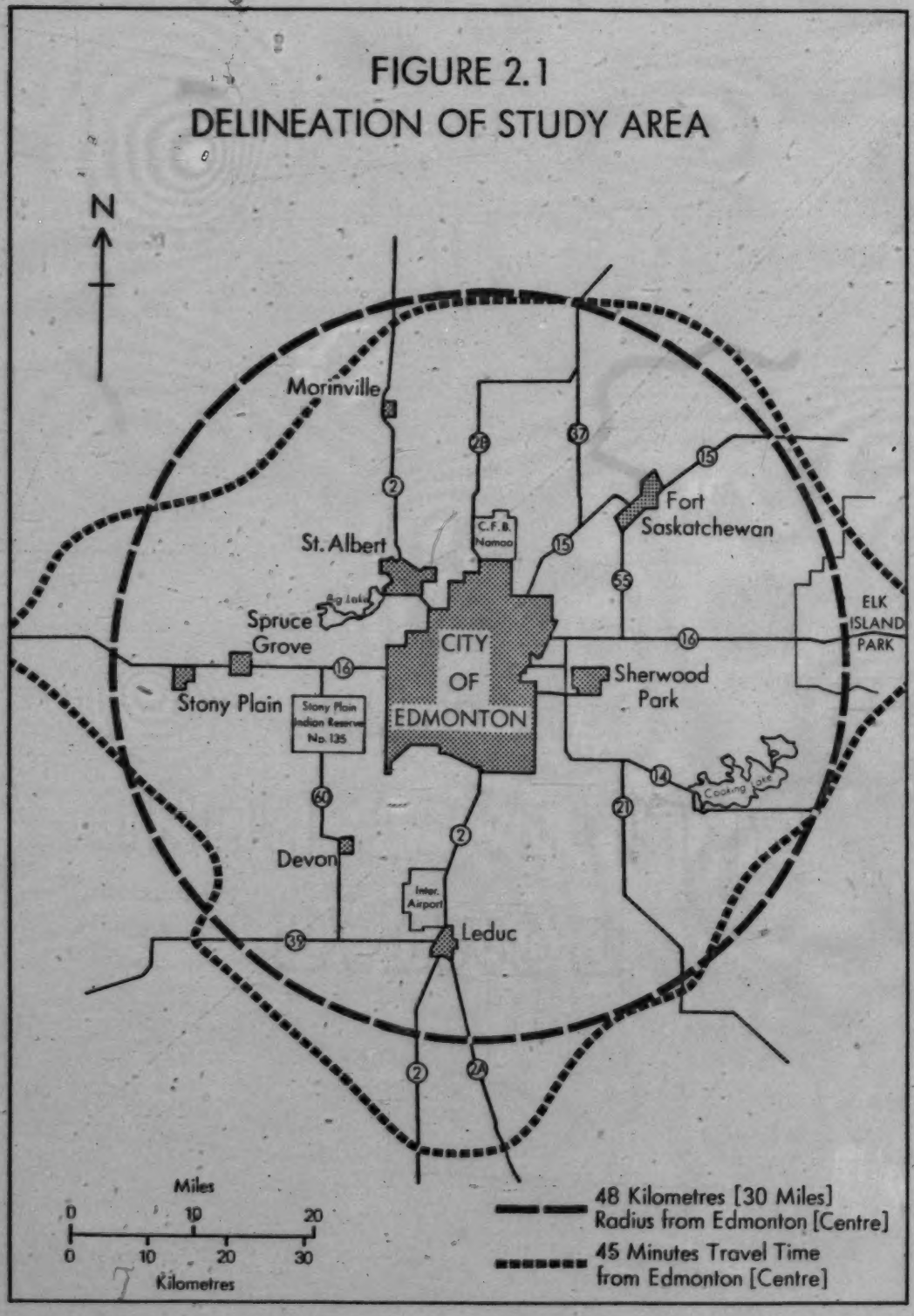
On this basis, the area considered in this study is the Edmonton Commuting Region which extends approximately forty-eight kilometres (thirty miles) or the equivalent of forty-five minutes travel time in each direction from the City centre. As outlined in Figure 2.1, this region is bounded by Stony Plain in the west, Leduc in the south, Elk Island Park in the east and Morinville in the north. The area was chosen for three principal reasons:

(1) all major communities within acceptable commuting distance of the central business district are included;

(2) journey to work data available from the 1971 Census of Canada and recent origin - destination surveys conducted by the Alberta Department of Highways and Transport, indicate that comparatively few workers commute from beyond this distance; and

(3) the results of a recent investigation into country residential development in the Edmonton area revealed that virtually all

FIGURE 2.1
DELINEATION OF STUDY AREA



subdivisions are situated within a forty-five minute travel time distance of the City Centre (Ward, 1977: 150).

The delineation of the study area, therefore, corresponds with a number of other studies which have shown that a rapid drop-off in commuters occurs at these times and distance thresholds.[4]

V. Procedure for the Selection of Urban Municipalities

Figure 2.1 indicates that the study region contains the eight municipalities - Devon, Fort Saskatchewan, Leduc, Morinville, St. Albert, Sherwood Park, Spruce Grove and Stony Plain. These municipalities have widely differing functions and reflect various kinds and degrees of influence of the City of Edmonton.

Since it is not feasible to study each community, an attempt will be made to select a representative sample of municipalities within the Edmonton metropolitan area. Selection is based on the following criteria: (a) rate of population growth; (b) employment structure; and (3) the dormitory function.

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[4] See, for example, MTARTS (1966) Growth and Travel, Past and Present, First Report, Metropolitan Toronto and Region Transportation Study, Toronto; Hodge, G. (1970) "The City on the Periphery", in L.S. Bourne, et al., eds., Urban Futures for Central Canada, University of Toronto Press, Toronto, pp. 281-301; Carvalho, M.E. (1974) The Nature of Demand for Exurbia Living, Winnipeg Region Study, Department of City Planning, University of Manitoba and Manitoba Municipal Planning Branch, Winnipeg; Alberta Land Use Forum. (1974) Parkland County Country Residential Survey, Technical Report No. 4A, Alberta Land Use Forum, Edmonton; Ward, R.G. (1977) Country Residential Development in the Edmonton Area to 1973: A Case Study of Exurban Residential Growth, M.A. Thesis, Department of Geography, University of Alberta, Edmonton.

A. Rate of Population Growth

As mentioned earlier, an increasing degree of decentralisation of the population has been occurring within the Edmonton metropolitan region over recent years. This is evident in Table 2.3 which indicates the annual rate of growth for metropolitan municipalities over the period 1971-1976. Each municipality has experienced much higher growth than

TABLE 2.3

Annual Growth Rates of Metropolitan Municipalities Within the Edmonton Metropolitan Area, 1971-1976

Municipality	Population 1971	1976	% Average Annual Rate of Growth
City of Edmonton	438,155	461,361	1.1
Devon	1,470	2,786	17.9
Fort Saskatchewan	5,726	8,304	9.0
Leduc	4,000	8,576	22.9
Morinville	1,475	2,097	8.4
St. Albert	11,800	24,129	20.9
Spruce Grove	3,029	6,907	25.6
Sherwood Park	14,282	26,166	16.6
Stony Plain	1,770	2,717	10.7

Source: Census of Canada, 1971 and 1976.

the City of Edmonton (1.1% annually) with the highest growth rates occurring in Spruce Grove and Leduc, 25.6 percent and 22.9 percent respectively. Then, follows a group of municipalities - St. Albert, Devon and Sherwood Park - with growth rates of 20.9 percent, 17.9

percent and 16.6 percent respectively. Stony Plain, Fort Saskatchewan and Morinville have experienced considerably lower annual growth rates, 10.7 percent, 9.0 percent and 8.4 percent respectively.

B. Employment Structure

Several classifications of urban centres have been devised, many of which are based on employment and occupation ratios since a close link exists between an employment group and a town's function (Carter, 1975: 52). It is not the numbers employed which are immediately important, but rather the proportional place which an employment group takes in the whole range of groups in the town.

Detailed statistics of the labour force by industrial division for each municipality were obtained from the 1971 Census of Canada. The data were classified according to function using a system adopted by the Dominion Bureau of Statistics (D.B.S.) in its Standard Industrial Classification Manual in 1971. Although eleven categories are used in the manual, only nine appear in this study since no "Forestry" and "Fishing and Trapping" were found and little that could be classified as "Agricultural" was encountered. The last category was, however, retained as some industries closely associated with agriculture do occur.

At this point, mention should be made of some problems which are encountered when equating employment category with town function. An obvious difficulty relates to the large number of arbitrary decisions which have to be made when reducing the many thousands of occupations into a limited number of significant groups. For example, as the D.B.S. classification places an oil company office within the "Manufacturing" category, Devon appears to have an important manufacturing

TABLE 2.4

Labour Force by Industrial Division, 1971

Industry Categories	Devon		Fort Saskatchewan		Leduc		Morinville		St. Albert		Sherwood Park		Spruce Grove		Stony Plain	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	10	1.7	35	1.7	45	2.85	15	3.2	45	1.0	10	0.2	25	2.3	35	5.4
Other Primary	50	8.8	70	3.4	95	6.0	20	4.3	105	2.4	220	4.4	60	5.4	15	2.3
Manufacturing	105	18.4	745	35.6	80	5.1	65	13.8	490	11.25	695	13.85	110	10.0	20	3.1
Construction	75	13.2	115	5.5	130	8.25	50	10.6	370	8.5	505	10.1	135	12.2	70	10.85
Transportation, Communications and Utilities	40	7.0	130	6.2	225	14.3	20	4.3	455	10.45	535	10.7	115	10.4	45	7.0
Trade	75	13.2	195	9.3	245	15.6	90	19.2	805	18.5	795	15.85	225	20.4	140	21.7
Finance, Insurance, Real Estate	20	3.5	50	2.4	55	3.5	10	2.1	190	4.4	240	4.8	50	4.5	15	2.3
Community Business, and Personal Service	140	24.6	425	20.3	470	29.8	95	20.2	1222	28.0	1395	27.8	250	22.6	190	29.5
Public Administration and Defence	35	6.1	215	10.3	95	6.0	40	8.5	430	9.9	425	8.5	80	7.2	65	10.1
Unspecified/ Undefined	20	3.5	110	5.3	135	8.6	65	13.8	245	5.6	190	3.8	55	5.0	50	7.75
Total	570	100.0	2090	100.0	1575	100.0	470	100.0	4355	100.0	5010	100.0	1105	100.0	645	100.0

Source: Census of Canada, 1971; Special Tabulations; "Experienced Labour Force by Industry Division by Class of Worker and Sex" and "Experienced Labour Force by Industry". Alberta Treasury, Bureau of Statistics.

function (see Table 2.4). However, the town actually functions as a regional service centre for the oil and gas industry because several of its businesses are specialised oil field servicing, maintenance and construction firms which operate in the surrounding area. Secondly, the method is not particularly suited to satellite residential dormitories such as St. Albert and Sherwood Park, which function as sections of the metropolitan cities because the greater part of their working populations are employed elsewhere in the metropolitan area. Such communities have experienced considerable population growth and residential expansion which has been accompanied by relatively little commercial and industrial development. Accordingly, many functions in these communities have decreased in relative importance, leaving an emphasis on employment in those categories which "provide services" rather than "produce goods". With every metropolitan municipality now performing a dormitory function, it has become increasingly more difficult to achieve a functional differentiation of communities in the study region.

Nevertheless, the method still proves useful in the selection of communities for study. Table 2.4 indicates that all eight communities have high ratios in the "Service Industries" category. In fact, in all communities except Fort Saskatchewan, it comprises the largest single functional category. This is consistent with the fact that most towns are basically service centres. The Town of Fort Saskatchewan, though it also functions as a service centre, is dominated by manufacturing, as reflected in the high proportion in that category. Similarly, the Town of Leduc, situated at the northern end of the Edmonton-Calgary Corridor, performs the role of a transportation centre in addition to its existing function as both an agricultural and oil field service centre.

C. Dormitory Function

Table 2.5 indicates the extent to which each municipality within the study region is being used as a residential dormitory for people employed in the City of Edmonton. It is evident that most commuters reside in municipalities close to the City though it is hard to establish any clear-cut pattern. For instance, in St. Albert and Sherwood Park, almost three-fifths of the work force commute to Edmonton. In Stony Plain and Fort Saskatchewan, on the other hand, under 12 percent commute. In these cases, other factors, such as a stable population and nearby industry, affect the number of people commuting.

TABLE 2.5

Proportion of Labout Force in Selected Municipalities Commuting to Edmonton, 1971

Municipality	Proportion of Local Labour Force (%) With Place of Work in Edmonton
Devon	22.7
Fort Saskatchewan	11.7
Leduc	25.8
Morinville	23.0
St. Albert	59.3
Sherwood Park	58.7
Spruce Grove	59.1
Stony Plain	11.2

Source: Census of Canada, 1971. Special Tabulation: Employed Labour Force by Residence and Place of Work. Alberta Bureau of Statistics.

On the basis of the foregoing discussion, the following four communities were selected for study. The first, St. Albert, represents a classic example of a suburban dormitory community in that residents are very dependent on other communities (mainly Edmonton) for their jobs. Local industrial and commercial development has failed to keep pace with the rapid increase in population. This is evident by its small non-residential tax base which presently (1977) is only 5 percent of total assessment. The Town of Fort Saskatchewan, on the other hand, was selected on account of the fact that it represents the only industrial satellite within the study region. Even though the community has recently been performing a dormitory function which has reduced the non-residential assessment in the Town's total assessment, Fort Saskatchewan still belongs to the fiscally strongest municipalities in the metropolitan area. The Town of Leduc was chosen as it is one of the most rapidly growing communities in the metropolitan area. Although this growth may, in part, be due to the development of the International Airport, the major factor has unquestionably been its development as a residential dormitory of Edmonton. The Town is also the most diversified service centre providing transportation, agricultural and oil-field services. The Town of Stony Plain was selected since it represents a "Trading Town" within the region. For a long period of time, the Town experienced only a very gradual increase in population. Although this has changed in recent years as it has begun to serve as a dormitory for people who work in Edmonton, the Town of Stony Plain remains fairly self-sufficient since over three-fifths of its workforce are still employed locally.

The geographical location of these communities with respect to the City of Edmonton will help to ascertain whether there is any directional bias in the pattern of expenditures made by commuter families within the study region.

A brief socio-economic description of each of the study communities appears in the following section.

VI. Description of Selected Urban Municipalities

A. St. Albert

The City of St. Albert is a suburban dormitory community located thirteen kilometres (eight miles) northwest of Edmonton. Over the past twenty-five years, population growth in St. Albert has had an increasingly significant impact on the form of urban development in the Edmonton metropolitan area in that it has been one of the prime foci of residential development in the region. During the period 1951 to 1977, the population of St. Albert doubled its size more than four times, increasing from 1,129 to 25,543 persons. By comparison, the population of the Edmonton metropolitan area[3] increased from 214,141 in 1951 to an estimated 617,000 in 1977. In this period, St. Albert's population growth accounted for almost 6 percent of the absolute population increase experienced in the metropolitan area. It is significant that over half (56.3 percent) of the total population increase in St. Albert during this period has occurred in the last six years. Indeed, of all the

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[3]Metropolitan area as defined by the Edmonton Region Growth Studies, Edmonton Regional Planning Commission, Technical Paper No. 3, January 1975.

metropolitan municipalities, only Leduc and Spruce Grove grew at a faster rate of population increase over the period 1971 to 1977. However, in absolute terms, St. Albert's growth represented an increase in excess of 10,000 persons whereas the absolute increases for Leduc and Spruce Grove were 5,128 and 4.108 respectively. The emergence of St. Albert as a major urban centre within the metropolitan area is apparent when one compares its share of the metropolitan area population in 1951 and 1977. In 1951, only 0.5 percent of the metropolitan population lived in St. Albert; by 1977, the figure had risen to 4.1 percent.

For a small urban municipality (1951), the absolute population increase and population growth rate experienced has had a significant and far-reaching effect on the evolution of St. Albert as a community and on its function in the Edmonton area. Population growth to the extent experienced has continually changed or altered the physical, social and economic structure of the community such that continuous pressure has been placed on St. Albert to achieve a satisfactory balance among these major community components. An additional influencing factor has been the external socio-economic pressure exerted directly or indirectly by Edmonton's evolution as the growth centre of one of Canada's most rapidly growing economic regions. The combination of these factors has caused St. Albert to evolve as a residential dormitory with a disproportionately small economic base (City of St. Albert, 1976a: 2).

The failure of commercial and industrial development to keep pace with the rapid growth in population is evident in the tax assessment

figures for St. Albert. In 1976, the total tax assessment figure was $56,091,195, of which $53,357,035 (95.1 percent) was residential, $2,351,060 (4.2 percent) was commercial, and only $383,100 (0.7 percent) was industrial. This small non-residential component is an important fiscal fact of being a satellite of a large metropolitan community. The City of Edmonton not only provides services lacking in St. Albert but frequently competes actively for the performance of services available in both. As a result, Table 2.6 indicates that St. Albert lies far behind non-satellite communities in both the total number of retail and service trade outlets and per capita receipts. Although some maturation of the commercial structure will take place, these figures will likely remain low because of competition from Edmonton.

TABLE 2.6

Number of Retail and Service Trade Outlets and Per Capita Receipts, St. Albert, 1975.

Municipality	Population	Number of Retail and Service Trade Outlets	Per Capita Retail and Trade Receipts ($)
St. Albert	21,342	93	1,593
Grande Prairie	16,618	214	6,650
Medicine Hat	30,174	388	5,062
Red Deer	30,107	349	6,838

Source: Retail and Service Trade Statistics. Alberta Bureau of Statistics, 1975.

The City of St. Albert does not, in fact, have its own economic base per se: its employment opportunities and labour force exist as part of

the much larger Edmonton region labour force (City of St. Albert, 1976c: 12). St. Albert's position as a residential satellite is reflected in Table 2.7 which indicates that the proportion of employment in industries which "produce goods" rather than "provide services" is less than one half as important as it is in other Alberta communities of comparable size.[4] Indeed, until such time when the municipality has developed its own internal and external economic potential, it seems likely that St. Albert will continue to be closely dependent on the City of Edmonton's (and the region's) economic activity as a major stimulant of economic growth.

The City of St. Albert has now grown to a point where 80 percent of its annual revenue is derived from residential land and improvements and over 80 percent of its employed labour force earn their income outside the municipality's boundaries (City of St. Albert, 1976c: 3). In spite of this, St. Albert attempted to compensate for its lack of industry by requiring residential development to pay its way by establishing high assessments and/or mill rates, special charges for the privilege of a noise-free and pollution-free environment, low social service costs and similar benefits (Bettison, Kenwood and Taylor, 1975: 254-255). At present, however, the attraction of industry is considered a generally desirable goal for the community since this would improve the socio-economic unity of St. Albert. Residents would then have the

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[4]Those industries which "produce goods" are Agriculture; Other Primary; Manufacturing; and Construction. Industries which "provide services" are Transportation, Communication and Utilities; Trade; Finance, Insurance and Real Estate; Community, Business and Personal Service; and Public Administration

TABLE 2.7

Percentage of Experienced Labour in Each Industry: St. Albert and Other Alberta Communities

Industry	St. Albert[1] No.	St. Albert[1] %	Lethbridge No.	Lethbridge %	Medicine Hat No.	Medicine Hat %	Red Deer No.	Red Deer %
Agriculture	-	-	455	3	455	4	90	1
Other Primary	-	-	60	0	135	1	415	4
Manufacturing	81	4	2,540	14	1,615	15	905	8
Construction	71	3	1,355	8	575	5	720	6
Transportation, Communication and Utilities	91	4	1,560	9	1,080	10	870	8
Trade	517	22	3,680	20	1,785	17	2,195	19
Finance, Insurance and Real Estate	172	7	760	4	285	3	455	4
Community, Business and Personal Service	1,178	51	5,030	28	2,810	27	4,075	36
Public Administration	220	9	1,485	8	885	8	960	8
Unspecified	-	-	1,075	6	835	8	730	6
Total[2]	2,330	100	18,000	100	10,460	100	11,400	100

Notes: (1) Figures refer to employment positions with St. Albert (1975)

(2) Components may not agree with totals due to rounding.

Source: Census of Canada, 1971 and Town of St. Albert 1975 Employment Survey

opportunity to live and work in the same community, and be provided with employment and income opportunities while the municipal tax base would be broadened.

B. Fort Saskatchewan

Located twenty-one kilometres (thirteen miles) northeast of Edmonton is the small manufacturing town of Fort Saskatchewan. Until 1951, however, the Town functioned as a well-established service centre for a dense and wealthy agricultural community. This stability is reflected in the population level which increased by only 63 persons, from 993 in 1916 to 1056 in 1951.

The decision of Sherritt-Gordon Mines Ltd. in 1951 to construct a major nickel refining plant at Fort Saskatchewan radically transformed the Town from an agricultural service centre to a manufacturing centre. Two years after the plant had commenced operation in 1954, the population of Fort Saskatchewan had more than doubled to a 1956 population of 2,582. This represented a 140 percent increase and compares dramatically to the 8 percent population growth experienced in the 35-year period between 1916 and 1951. Shortly after the completion of the Sherritt-Gordon plant, three other significant industrial developments occurred in the immediate vicinity of the plant and underscored the Town's new role. This functional transition resulted in the Town maturing, in the 1960's, into a well-balanced satellite community providing a large number of local employment opportunities and primary services for its residents. In 1971, labour force figures indicated that 68.5 percent of the Town's labour force was employed locally as compared to 46.7 percent for the Town of Leduc, 27.2 percent for the

County of Strathcona, and 25.3 percent for the Town of St. Albert. Fort Saskatchewan in 1971 was, therefore, a relatively self-contained satellite community which derived its strength and independence from a local manufacturing base employing a high proportion of local residents.

Although the Town has continued to grow since 1971, increasing by 3,860 persons to the present (1977) figure of 9,586 this growth can no longer be attributed to the expansion of local manufacturing firms. The recent cause of Fort Saskatchewan's growth has been the expansion of the dormitory residential function which the Town is performing for employment generating activities located in the Town's sub-region and the City of Edmonton (Mackenzie Associates Ltd., 1976: 10). As a result, in the spring of 1976, only 53 percent of Fort Saskatchewan's residents were employed locally.

Despite the large influx of population into the community, Fort Saskatchewan has experienced a comparatively slow development of its commercial sector. This is reflected in Table 2.8 which reveals that

TABLE 2.8

Comparison of Retail and Service Trade Outlets and Per Capita Receipts in Selected Communities of Alberta, 1975.

Municipality	Population	Number of Retail and Service Trade Outlets	Per Capita Retail and Service Trade Receipts ($)
Fort Saskatchewan	8,113	90	2,660
Camrose	9,248	197	7,878
Hinton	6,266	90	4,039
Leduc	8,214	81	3,257
Wetaskiwin	6,645	130	11,890

Source: Retail and Service Trade Statistics. Alberta Bureau of Statistics, 1975.

Fort Saskatchewan ranks well below comparable sized communities in terms of both the number of outlets and per capita receipts. The fact that little commercial growth has taken place relative to the growth of industry, population and housing is substantiated by the assessment figures for Fort Saskatchewan. In 1976, the total assessment figure was $27,771,630, of which $15,304,980 (55.1 percent) was residential, $10,543,150 (38.0 percent) was industrial, and only $1,923,500 (6.9 percent) was commercial. This state-of-affairs is obviously attributed to the attractiveness of a wide variety and selection of goods and services available in Edmonton. There is, however, another factor which must not be overlooked. This is the fact that the major industries have made comparatively little use of the Town's businesses and professional services.

Although the proportion of residential assessments to total taxable assessments has risen markedly over the past few years due to the dormitory function, the Town of Fort Saskatchewan still belongs to the fiscally strongest municipalities within the metropolitan area. However, a balance of residential, industrial and commercial growth will be needed in the future in order to maintain some degree of economic and social self-sufficiency, as well as to provide the reservoir from which to finance the growing costs of urban services and facilities that logically will be demanded in the Town. With the large amount of industrial development scheduled to locate in Fort Saskatchewan, it appears that relative to some other metropolitan municipalities, the

Town should not find it difficult to accomodate extensive population growth.

C. Leduc

Located twenty-four kilometres (fifteen miles) south of Edmonton, the Town of Leduc had primarily been a supplier of goods and services to the surrounding agricultural region. Even the famous discovery of the Leduc Oilfields in 1947 failed to substantially weaken this major role. While the agricultural factor has resulted historically in a steady growth of the Town's commercial and residential base, it is the operation of the International Airport and the development of Leduc as a dormitory of Edmonton that has rendered the Town a recipient to the recent migration of a substantial number of residents from Edmonton.

From 1951, just four years after the discovery of oil in the region, to 1971, there was a modest increase in the population from 1,842 to 4,000 persons. Since 1971, however, the Town of Leduc has experienced rapid structural change in its physical size, in its population size and composition, and in its role as a community within the Edmonton region. The Town's population more than doubled between 1971 and 1977 to the present level of 9,128 residents. In this six year period, Leduc accommodated 5.5 percent of the metropolitan population growth and was growing at a very rapid 14.8 percent average annual growth rate. In fact, the only metropolitan municipality to surpass this rate of growth was Spruce Grove (15.4 percent).

In reaction to this rapid population growth, the number of commercial establishments in the Town has expanded to a surprising degree.

To some extent this may be depicted in the historical documentation of building permits issued to industrial and commercial activities in the Town. Industrial and commercial development from 1963 to 1974 had a total value of approximately $3.75 million (Source: Edmonton Regional Planning Commission Annual Reports, 1963 through 1974). It is significant that 56 percent of building permits were issued since 1971 and that 71 percent of the total value of building permits were expended in the Town since that year. This coincides with the period in which Leduc has been experiencing a rapid growth in its population. In spite of this, Table 2.8 indicates that commercial development in the Town of Leduc still lags far behind that existing in other similar sized communities in Alberta. This is the result of the Town's proximity to Edmonton's greater variety of goods and services.

Although the rate of growth has so far not created severe municipal financial problems, Leduc has nonetheless decided to opt for "balanced development", that is, industrial as well as residential growth. Employment opportunities are increasing rapidly as the Industrial Park in Leduc is developing together with the development of the Nisku Industrial Park which is only six kilometres (four miles) north of Leduc. While the Town's Industrial Park is particularly suitable for labour-intensive industries, Nisku is ideal for industries requiring large warehousing areas. In addition, Leduc benefits from its proximity to aviation-related commercial-industries located at the Industrial Airport. All three areas have proposals for further expansion (Edmonton Regional Planning Commission, 1977: 109).

Leduc has been obliged to adopt its balanced development policy if it is to continue to accept residential development and not to pursue

significantly different development policies. The town is speculating that it will succeed and has proceeded to invest in the industrial park. However, by 1976, over 70 percent of Leduc's labour force were employed outside the Town, 47 percent in Edmonton.

D. Stony Plain

Located twenty-nine kilometres (eighteen miles) west of Edmonton, the Town of Stony Plain has traditionally been a rural service centre based on the agricultural economy of the surrounding area. With the rapid population growth in the region; which, in the last decade, has increasingly decentralised from the City of Edmonton to the municipalities within its commutershed, the role of Stony Plain in the area has shifted from an agricultural service centre to a suburban dormitory community. This change has intensified since 1972 when, for the first time, residential permits for over a hundred dwelling units were issued in the Town in a single year (Edmonton Regional Planning Commission, 1978: 24).[5]

During the period 1961 to 1971, Stony Plain experienced a very slow increase in population amounting to only 459 additional persons

[5]Building Permits: Number of Dwelling Units.

Year	No. of Dwelling Units	Year	No. of Dwelling Units
1971	34	1975	113
1972	128	1976	122
1973	97	1977	156
1974	89		

Source: Building Permits: Annual Summary. Catalogue 64-203, Statistics Canada.

(a 3.5 percent annual growth rate) because the Town, keen to retain its small town atmosphere, adopted a policy of controlled growth (Stahl, 1975: 50). Since 1971, however, Stony Plain has begun to experience more pressures from outside to become a dormitory satellite. As a result, the Town's population increased by 1,270 residents and grew at a rate of 9.5 percent annually. This rate of growth even though high relative to the past was not, however, particularly high when measured by the growth performance of some other metropolitan communities. For example, Stony Plain's closest neighbour, Spruce Grove, grew in the same 1971 to 1977 period, despite its larger 1971 population base, by 15.4 percent annually. Some other metropolitan municipalities with an even larger population base than Spruce Grove, St. Albert and Sherwood Park, for example, also grew much faster than Stony Plain (annual growth rates of 13.7 percent and 12.9 percent respectively).

As mentioned earlier, the Town of Stony Plain was, until recently, a self-sufficient community whose function on the periphery of the Edmonton metropolitan area was to serve surrounding rural agricultural areas. This localised function is to a large degree reflected in Table 2.9 which illustrates Stony Plain's labour force by industrial division in 1961 and 1971 and local employment opportunities in 1971. The table indicates that a large proportion of the Town's employment is concentrated in three major service categories--"Community Business and Personal Services," "Trade" and "Public Administration and Defence." The remaining industrial categories, with the exception of "Construction", are rather insignificant in size.

TABLE 2.9

Labour Force and Employment by Industrial Division, Stony Plain, 1961-1971

Industry Categories	1961 Labour Force	Proportion of Total (%)	1971 Labour Force	Proportion of Total (%)	% Change 1961-1971	1971 Employment Opportunities	Proportion of Total (%)
Primary Industry	22	5.1	45	7.0	104.5	45	5.6
Manufacturing	10	2.3	20	3.1	100.0	30	3.8
Construction	34	7.9	70	10.9	105.9	90	11.3
Transportation, Communication and Utilities	74	17.2	40	6.2	-45.9	55	6.9
Trade	113	26.2	140	21.7	23.9	155	19.4
Finance, Insurance and Real Estate	13	3.0	10	1.6	-23.1	30	4.8
Community Business and Personal Services	118	27.4	190	29.5	61.0	315	39.4
Public Administration and Defence	39	9.0	65	10.1	66.7	90	11.3
Unspecified/Undefined	8	1.9	50	7.8	525.0	5	0.6
Total	431	100.0	645	100.0	49.7	800	100.0

Note: Totals may not exactly equal the sum of individual entries due to random rounding.

Source: Edmonton Regional Planning Commission. Town of Stony Plain: Population Growth and Economic Development Prospects, 1978. p. 32.

An important feature, distinguishing Stony Plain from other metropolitan municipalities in 1971, was the large proportion (68.0 percent) of the Town's labour force employed locally. Only the industrial satellite of Fort Saskatchewan (68.5 percent) and the City of Edmonton (85.7 percent) exceeded this figure. By comparison, those metropolitan communities whose residents are very dependent on other municipalities (mainly Edmonton) for their jobs such as St. Albert and Spruce Grove, had only 25.3 percent and 22.6 percent respectively of their labour force employed locally.

The fact that Stony Plain has had a fairly high degree of self-sufficiency is reflected in Table 2.10 which indicates the Town's exceptionally strong position in retail and service trade within the metropolitan area.

TABLE 2.10

Retail and Service Trade Sales Per Capita for Selected Municipalities in the Edmonton Metropolitan Region, 1971 and 1975.

Municipality	Per Capita Sales ($) 1971	1975	% Change 1971-1975
Stony Plain	4378	6345	+44.9
Edmonton	2530	5111	+102.0
Fort Saskatchewan	1393	2660	+91.0
Leduc	2160	3257	+50.8
St. Albert	815	1593	+95.5
Spruce Grove	1757	3980	+126.5

Source: Retail and Service Trade Statistics. Alberta Bureau of Statistics, 1971 and 1975.

The Town's per capita sales in 1975 were well over $6,000 as compared to some other municipalities such as the City of Edmonton with $5,111 or St. Albert and Spruce Grove with $1,593 and $3,980 respectively. However, even though high, relative to other metropolitan municipalities, the rate of growth in per capita sales was the lowest.

In order to avoid financial problems usually inherent in dormitory situations, Stony Plain, like Fort Saskatchewan and Leduc, has embarked on a policy of "balanced" growth. Although the outcome of this policy will be dependent largely on the location decisions of private investors and industrialists, it is expected that accessibility to the central city and the low price of land in Stony Plain, which have been important stimulants to the Town's recent population growth, will continue to be significant factors in its attractiveness to prospective industrial activities. Recent developments along Highway 16 between Stony Plain and Edmonton involving the servicing of large tracts of industrial land attest to a growing interest by developers of industrial land and investors in this zone. However, relative to the amount of industrial land which has been serviced the actual industrial development is very difficult to predict. This uncertainty holds true for the Town of Stony Plain (Edmonton Regional Planning Commission, 1978: 49).

VII. Subdivision Activity in the Edmonton Region

The proceeding section deals with the extent to which land in the Edmonton metropolitan region has been converted from an agricultural

use or a natural state to an essentially urban-oriented county residential use. This discussion forms the basis for the selection of the rural municipalities to be studied in this research.

There have been two major periods of subdivision and development activity in the region: the first occurred prior to 1968 and the second has occurred since that time (Ward, 1977: 57). Until the mid-1950's, the supply of land available for small acreage residential development stemmed largely from a number of subdivisions remnant of the 1908 to 1912 "land boom" that prevailed throughout the Edmonton area. During this period, large tracts of land were subdivided and registered for speculative purposes. Although many of these old subdivisions have subsequently been incorporated into the City, some still remain outside the City's corporate boundaries. These are located in close proximity to the north and west boundary of the City in the M.D. of Sturgeon and the County of Parkland, and comprise virtually the total supply of acreage parcels available for development in the region prior to 1953. Although intended to be used solely for residential purposes, the majority of these parcels were developed as small-scale agricultural holdings. Throughout this period, both the supply and demand for small acreage parcels was maintained at a low level.

In 1953, subdivision activity began to increase. At this time, the County of Strathcona was actively encouraging residential subdivision and had been supporting proposals for the establishment of a "satellite" community within the municipality since January, 1951. The region surrounding this proposed townsite, which eventually evolved into the hamlet of Sherwood Park, became the major concentration of subdivision

activity in the Edmonton area until the early 1970's. Although increased subdivision activity did occur in other parts of the Edmonton metropolitan area during the mid-1950's, no other major areas of concentration were readily discernible.

In 1953, approximately 73 percent of the parcels available for development throughout the region were occupied. By 1960, the figure had dropped to 58 percent as subdivision activity during the late 1950's exceeded development by a considerable margin (Ward, 1977: 66). This trend continued until 1962 at which time subdivision activity diminished in intensity and was exceeded by development. The development of existing county residential subdivisions continued to outpace the creation of new parcels through the mid-1960's and by 1967, the percentage of parcels developed had reached a high of 58 percent, the highest level achieved since 1960 and unequalled since. However, the rate of development varied considerably among the four municipalities with the County of Parkland consistently lagging far behind the others. The County of Strathcona, on the other hand, consistently rated the highest in terms of the proportion of parcels occupied (Ward, 1977: 64).

Although the County of Strathcona remained the major area of both subdivision and development until 1968, both Parkland and Sturgeon Counties were beginning to experience larger annual percentage increases. In 1968, a new area of subdivision concentration appeared in the County of Parkland. This area, referred to as Township 51-26, is situated on an environmentally sensitive sand dune area southwest of Edmonton. Within two years, Township 51-26 had developed into the most intensively subdivided Township in the region (excluding the hamlet of Sherwood

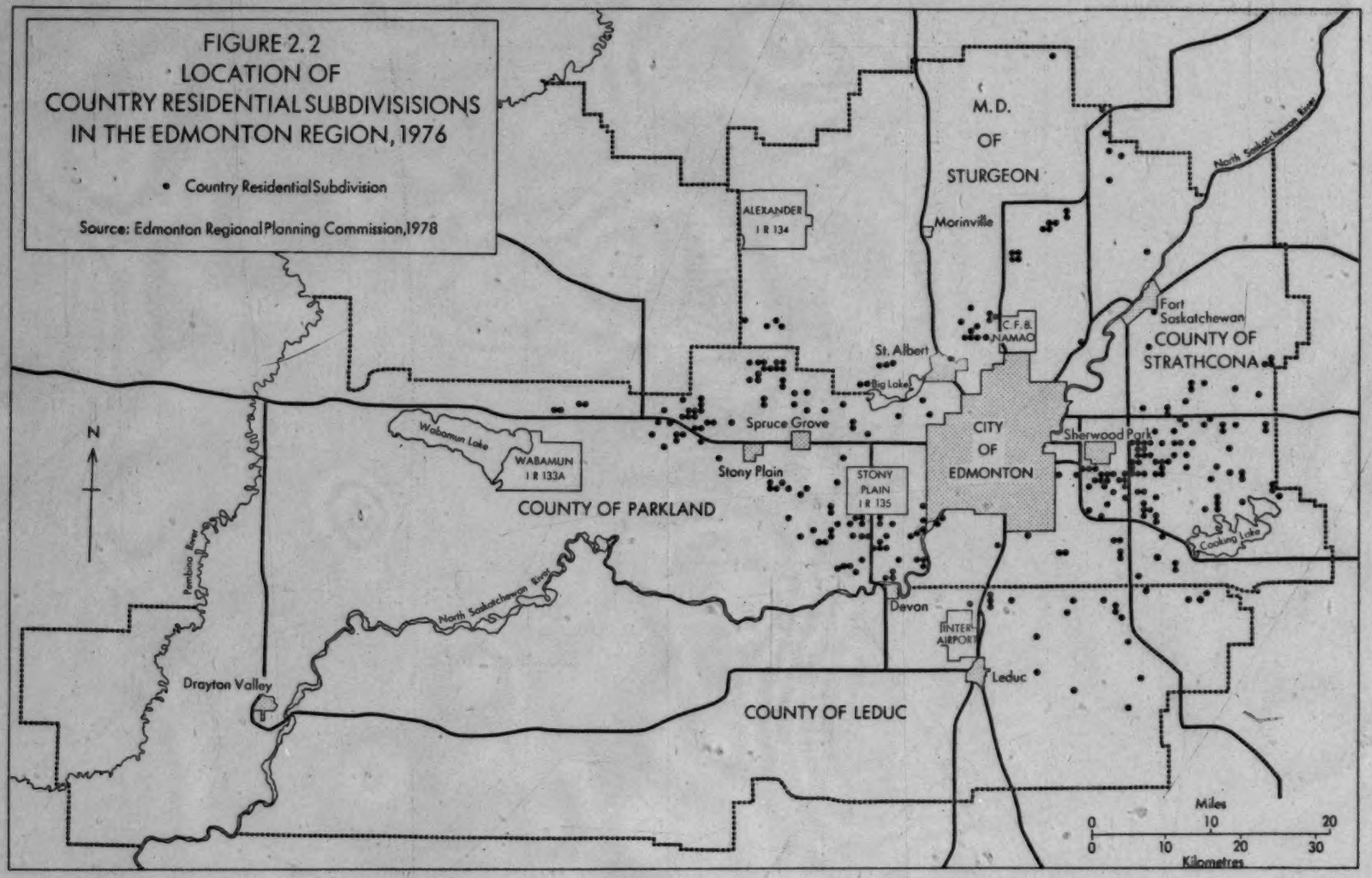
FIGURE 2.2
LOCATION OF
COUNTRY RESIDENTIAL SUBDIVISIONS
IN THE EDMONTON REGION, 1976
• Country Residential Subdivision
Source: Edmonton Regional Planning Commission, 1978
M.D.
OF
STURGEON
ALEXANDER
I R 134
Morinville
North Saskatchewan River
C.F.B.
NAMAO
Fort
Saskatchewan
COUNTY OF
STRATHCONA
St. Albert
Big Lake
Spruce Grove
CITY
OF
EDMONTON
Sherwood Park
Wabamun Lake
WABAMUN
I R 133A
Stony Plain
STONY
PLAIN
I R 135
COUNTY OF PARKLAND
Cooking Lake
N
Pembina River
North Saskatchewan River
Devon
INTER-
AIRPORT
Leduc
Drayton Valley
COUNTY OF LEDUC
Miles
0 10 20
0 10 20 30
Kilometres

Park). Despite the increasingly rapid pace of subdivision activity in Parkland at this time, the development of county residential parcels remained the lowest of all municipalities averaging only 27 percent between 1969 and 1973. This compared to 63 percent in Strathcona, 50 percent in Sturgeon, and 40 percent in Leduc (Ward, 1977: 64).

Figure 2.2 illustrates the degree to which country residential development has been concentrated in Parkland and Strathcona. In general, the areal extent of subdivision activity within the region was determined prior to 1965. Most of the subdivisions approved since then have simply served to "fill in" this area. The major exception, however, is a number of low density 40 acre parcels created and developed in the Cooking Lake Moraine between Sherwood Park and Elk Island Park.

VIII. Selection of the Rural Municipalities

From the foregoing discussion, it is evident that the Counties of Parkland and Strathcona have been the prominent areas for the subdivision and development of land for country residential purposes in the Edmonton area. This is substantiated in Table 2.11 which indicates the total amount of country residential home construction by rural municipality during the period 1962 to 1973. The table shows that Parkland and Strathcona have accounted for 80 percent of the total country residential dwellings built over the period.

The Counties also lead in the pressure to subdivide, as is shown in Table 2.12 which indicates the number of applications to subdivide during the period 1962 to 1976:

TABLE 2.11

Country Residential Construction in the Edmonton Region, 1962-1973.

Municipality	1962-1966		1966-1971		1972-1973		Total	
	No.	%	No.	%	No.	%	No.	%
County of Leduc	13	3.2	55	7.2	71	6.4	139	6.1
County of Strathcona	266	66.3	299	39.1	402	36.2	967	42.5
M.D. of Sturgeon	35	8.7	143	18.7	136	12.3	314	13.8
County of Parkland	87	21.9	267	34.9	501	45.1	855	37.5
Total	401	100.1	764	99.9	1110	100.0	2275	100.0

Note: The above figures refer to the number of building permits issued for country residential development. Permits for alterations, repairs, garages, etc. are not included.

Source: Edmonton Regional Planning Commission Annual Reports, 1962 through 1973.

TABLE 2.12

Application to Subdivide, 1962-1976

Municipality	Parcels Applied For No.	(%)	Parcels Approved	Parcels Refused	Parcels Pending Decision
County of Strathcona	6766	(28.9)	2517	1933	2256
County of Parkland	9739	(41.6)	3308	1982	4449
M.D. of Sturgeon	4403	(18.8)	1186	1291	1926
County of Leduc	2500	(10.7)	531	1064	905
Total	23,408	(100.0)	7542	6330	9536

Source: Edmonton Regional Planning Commission Annual Reports, 1962 through 1976.

However, even though the amount of subdivision and the pressure to subdivide place the counties ahead when actual development of lots is considered, it appears that the pace of development varies considerably among the four municipalities with Parkland having the lowest rate and Strathcona the highest. This is important from the point of view of municipal service costs since a subdivision that is only partially developed with nonetheless cost the same as if it were totally developed since the service requirements remain about the same (Alberta Land Use Forum, 1974: 9).

For these reasons, it was decided to sample acreage-dwellers residing within the rural municipalities of Parkland and Strathcona.

CHAPTER THREE

RESEARCH METHODOLOGY

I. Introduction

The methodological procedures employed in this study were based on the need to gather information on the expenditure patterns made by commuters and their families in order to meet the objectives set forth in Chapter One. These considerations, together with those concerning validity and reliability, have guided the selection and development of the data gathering techniques to be reviewed in this chapter.

II. Data Gathering Techniques

As little published or unpublished data exists, the only way of obtaining as complete data as possible on the spending patterns of commuters was to approach householders with some kind of questionnaire. However, before any questionnaire could be designed, a decision had to be taken regarding the technique that should be used to obtain the information sought, as different techniques impose different demands on the design of a questionnaire.[1] Two techniques of possible use to the study were investigated: the use of mailed questionnaires and personal interviews.

No one data collection technique is superior to another; rather all have strengths and weaknesses. Therefore, it is the researcher's task to maximise the strengths of the technique most suitable to his hypotheses while, at the same time, attempting to minimise that

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[1] A discussion of the use of different techniques of information gathering and associated questionnaires can be found in Burton and Noad (1968: 26 - 28).

particular technique's weaknesses (Phillips, 1968: 109).

The relative merits and demerits of the mail questionnaire have provoked a considerable amount of discussion. By far the greatest disadvantage of the technique is the fact that it usually produces a very poor response rate. Experience suggests that a return of between 30 and 50 percent is usual, and that a return of above 50 percent is good (Burton and Cherry, 1970: 39). It was recognized at an early stage in the research that the household questionnaire would have to be of a rather substantial length in order to cover all relevant information for this study. This, together with the fact that many questions may be perceived as intrusive to the householder's privacy, led us to believe that a mail questionnaire would have probably reduced an already low response rate even further. It is not, of course, the reduced size of the sample that is serious, but the likelihood that the non-respondents may differ significantly from the respondents, so that estimates based on the latter are biased. Blalock (1960: 411) has empirically shown that the characteristics of non-respondents may be significantly different from those of respondents, and thus if the former were known, they would seriously limit the reliability of inferences made from the data.

A second problem with the mail questionnaire is that questions have to be sufficiently simple and straightforward to be understood with the help of printed instructions. There is no opportunity to probe beyond the given answer, to clarify an ambiguous one, to overcome unwillingness to answer a particular question or to appraise the validity of what a respondent said in the light of how he said it. Also, unsatisfactory or incomplete questionnaires must be accepted as final since they

cannot easily be returned to respondents. In short, therefore, the mail questionnaire is essentially an inflexible method (Moser, 1958: 178).

The main advantage of the mail questionnaire is that it is relatively cheap especially if one equates time with cost. It is possible to cover a wider geographical area and a larger sample of the population (with given financial resources) than is possible by the use of an interview survey (Burton and Noad, 1968: 19).

There are many advantages in the use of the interview survey as a research method. The greatest of these is, of course, its flexibility. The skilled interviewer can make sure that the respondent fully understands the questions and the purpose of the research; interviewers can probe further when particular responses are encountered; the respondent can be shown cards, lists and similar material which focus the respondent's attention more completely on the subject of interest. Above all, rapport can be established with the respondent thereby maintaining the latter's interest and participation in the survey (Burton and Cherry, 1970: 41). Understandably, the personal interview method usually yields a return, which percentage-wise, is large enough to satisft constraints of statistical techniques of analysis. This is of cricual importance since the description and analysis of a phenomenon through the use of statistical methods without the proper basis, will have to rest on heroic assumptions making the validity of the results doubtful. Another advantage of this technique over the mail questionnaire is the possibility of obtaining extra information often offered by the interviewee which helps in the interpretation of the data.

There are, however, a number of disadvantages to the personal interview technique, some of which spring directly from the above advantages. The most important of which is the problem of over-rapport,

leading to bias. The interviewer may be so successful in establishing rapport with the respondent that he or she unconsciously affects the latter's responses. However, through the use of a standardised questionnaire and a careful and consistent performance one could tentatively suggest that a bias, if any, is unlikely to be worse than a bias in the returned questionnaires of a mail-out survey.

Although the technique may be relatively time-consuming, it was decided that, in the light of what has been said about these two methods of data collection, the personal interview method would be employed for the collection of information concerning the purchase and expenditure patterns of commuters. Moreover, as it was necessary that the data be in a format which produced results comparable between all six of the study areas, a standardised or structured interview would be used. Without this comparability the drawing of conclusions on a level more general than the individual would be fruitless. Therefore, as Burton and Cherry point out: "the differences in responses reflect differences among respondents, and not differences arising from the different questions asked or the differences in meaning which the respondents have attributed to the same question " (Burton and Cherry, 1970: 43).

Realising that the household questionnaire would be susceptible to some degree of memory bias (that is, the inability of the respondent to provide accurate information on certain expenditures), it was decided that diaries would be distributed to willing respondents to allow more detailed investigation of purchasing to be made. The diary survey would be undertaken during the summer of 1977 as well as the winter of 1977/78 in order to account for any seasonal variations in expenditures. This would permit day-to-day recordings, references to records, and

consultation among household members, all factors which should contribute to the accuracy of results derived from the household questionnaire. A more detailed discussion of the expenditure diary appears later in the chapter.

III. The Household Questionnaire

The questionnaire serves two major purposes (Cannell and Kahn, 1966: 340). First, it must translate the research objectives into specific questions, the answers to which will provide the data necessary to test the hypotheses or to explore the area set by the research objectives. In order to achieve this purpose, each question must convey to the respondent the idea or group of ideas required by the research objectives, and each question must obtain a response which can be analysed so that the results fulfill the research objectives. The second function of the questionnaire is to assist the interviewer in motivating the respondent to communicate the required information.

Since the questionnaire is obviously constructed on the basis of the research objectives, its design cannot therefore be the first step in undertaking a research project. Rather, the statement of the research objectives and the specification of the data required to meet those objectives must precede questionnaire construction. When these have been established, the task of questionnaire design may begin. Four stages can be identified in the development of the finished questionnaire. These are: (1) the selection of question types or mode; (2) question wording; (3) question ordering; and (4) pre-testing. Each stage must be given careful consideration as each can heavily influence the type of responses which will be gathered or the overall response rate to the questionnaire.

A. Question Mode

Broadly speaking, all questions are either "open" or "closed" (Oppenheim, 1966: 40). The closed question offers the respondent a choice of alternative (predetermined) replies, thereby ensuring that responses fall along the desired dimensions (Ferman and Levin, 1975: 43). The respondent is asked to check or underline his chosen answer(s) in a written questionnaire, or the alternatives may be read aloud or shown to him on a prompt card. However, the lack of spontaneity and expressiveness means that there is the possibility of introducing bias by "forcing" the respondent to choose between given alternatives and making him think of alternatives that otherwise might not have occurred to him (Oppenheim, 1966: 43; Burton and Cherry, 1970: 57-58).

Open or free-answer types of question, on the other hand, are not followed by any kind of choice, and the answers have to be recorded in full. Such questions put very few words into the respondent's mouth and therefore, minimise any bias which may arise as a result of the restricted answers available in closed-ended questions (Phillips, 1966: 117). Accordingly, open-ended questions are effective in that they permit the respondent to reveal his own definition of a situation, thereby encouraging spontaneity of response. In an interview, however, there is the risk that, instead of a rounded and full account of his feelings, the respondent may only speak of what is uppermost in his mind at the time. Although this can be an important methodological consideration (or constraint), it may be partially resolved by judicious probing by the interviewer even though this may increase the risk of interviewer effect or bias.

Free-response questions are often easy to ask but they are difficult to answer, and still more difficult to analyse. As a rule, a classification process known as "coding" is employed which places the responses into some system of categories, commonly referred to as a

"coding frame". Closed questions, however, are much easier and quicker to answer; they require no writing; and quantification is straightforward.

Since open-and closed-ended questions serve quite different purposes, one type cannot necessarily be said to be "better" than the other. Burton and Cherry have discussed the theoretical basis for the selection of the mode of question to use for the gathering of data. They indicated that "open questions can usually be employed only in order to explore the issue at hand. Closed questions...can be used to bring all sides of a question to the respondent's attention" (Burton and Cherry, 1970: 58). In the context of the present study, on issues which demand exploration, such as the reasons for moving to their present home, the manner and extent of locational change in the use of facilities for goods and services since arriving in the community, the effect of multiple-purpose shopping on the location of expenditures, suggestions for improvements in the home community, differences in the retail and service facilities between the home community and Edmonton, and whether increased spending in the home community would have beneficial consequences upon the taxes for its residents (questions 5, 12, 15, 24, 26, 27, and 28), open-ended questions were employed. Closed-ended questions were employed to gather two types of data, factual and attitudinal. The factual questions referred to residence, workplace, expenditures on goods and services, local authority expenditures, and socio-economic profile data, all of which lend themselves to the closed format. Data on respondents' attitudes toward the commercial structure existing in their community of residence was sought by question 23 (see Appendix I).

B. Question Wording

Every researcher endeavours to phrase his questions in simple, everyday language, to avoid vagueness and ambiguity, and to use "neutral" wording. His difficulty lies in judging whether, with any particular question, he has succeeded in avoiding all these traps.

Two problems can arise in the wording of questions: (1) improper wording may lead to biased responses; and (2) the question may not be fully understood. The realisation of these problems and their causes is the best defence against questions which are unreliable or invalid.

Biasing responses by question wording usually results from either "loading a question", that is by suggesting an automatic feeling of approval or disapproval, or, through the use of "leading" questions which are so worded that they suggest what the answer should be or indicate the questioner's own point of view. "Forcing" the respondent into answering in a given way can have a preferred effect on the validity of the entire study (Ferman and Levin, 1975: 46).

Question wording is also extremely important when one is dealing with a cross-section of people in society. Questions must be devised in such a manner that each and every respondent interprets the question in exactly the same way, and this interpretation must be exactly the same as that intended by the researcher (Reichmann, 1966: 258).

In principle, a question is properly worded if the answers tell us what we want to know (Burton and Cherry, 1970: 56).

C. Question Order

Aside from the design and wording of individual questions, the researcher needs to give thought to the arrangement of questions in a

questionnaire because the order in which questions are asked can affect the responses as well as the overall data collection. Accordingly, the following guidelines were followed.

First, general questions should precede the more specific questions. For example, questions #1 through #9 are introductory questions relating to the residence and workplace of householders; questions #10 through #22 are more specific, dealing with expenditure patterns; questions #23 through #28 are by way of a summary of the preceding section of questions; questions #29 through #31 deal with more specific elements of local authority expenditures; and questions #32 through #44 are profile data questions.

Second, the question sequence should follow a logical order to enable the interviewer to lead easily from one point to the next and to retain the respondent's interest. As illustrated above, the questions follow a logical progression from general to more specific issues, while not asking the respondent to make radical changes in topic.

Third, the interview should start off with some easy, impersonal questions so that questions of a more sensitive nature can be asked when rapport has been well established. In this way, the respondent is already deeply involved in the interview and the subject matter being discussed and therefore is more likely to answer these somewhat "difficult" questions. During the actual interviewing, a few householders did express some concern over questions requiring the amount of dollars spent. A few words on their importance to the study usually allayed these misgivings.

D. The Pre-Test

No matter how astute the researcher has been in designing his questionnaire, a pretest of the questionnaire should be conducted before launching into the actual fieldwork. The value of this work is in the pre-test's ability to test the actual wording of questions in the event of any ambiguities in questions, the failure of questions to be understandable to respondents or the failure of questions to "fit" all respondents (Burton and Cherry, 1970: 56; Lansing and Morgan, 1971: 106). The pre-test can also provide guidance on: (1) the questionnaire format; (2) the adequacy of the sampling frame; (3) the non-response to be expected; and (4) the probable cost and duration of the survey. Therefore, the pretest is, in a sense, a miniature study in itself since it represents a test of the entire process of data collection and even of the first steps of analysis in addition to being simply a test of the instrument. Accordingly, the pre-test should be directed at a representative sample of the target population with the sample being selected in exactly the same fashion as is intended for the final survey. There is, however, one exception. As it was wished to avoid studying the same respondents in both the pre-test and the final survey, both samples were selected at the same time as an insurance against that possibility. To do this, an initial sample was selected containing enough households for both so that the pre-test could be subsampled.

Fifty households were interviewed (- twenty-five each in Leduc and St. Albert) during late May. Twenty-six non-responses were registered, of which sixteen were due to the refusal of the respondent to participate and the remaining ten were caused by the absence of respondents.

Repeated attempts to reach absent householders were made, as it was important to get the actual fieldwork started.

The results of the interviews were encouraging in that no major discrepancies in the questionnaire were detected. However, a few minor changes were carried out. Three questions were added to the revised questionnaire: Question thirteen was divided into two parts referring to: (1) convenience goods and (2) durable goods since shopping behaviour appeared to vary according to the category. A percentage breakdown of the household's monthly expenditure pattern was added to question twenty-five to make these estimates more complete. Question twenty-nine (b) was inserted to ensure that rental payments and the location of the landlord were included in the study. Questions fifteen, nineteen, twenty-two, thirty-three and forty-four were rephrased as some respondents experienced difficulties in understanding these questions. For example, in question thrity-three, respondents were not certain whether "household size" referred to the number of household members or to the total floor space of the household. A copy of the finished questionnaire appears in Appendix I.

From the test of the questionnaires it was estimated that an interview averaged 45-50 minutes in duration. This, of course, does not include the time spent moving from one household to another. As the test interviews were widely scattered in each community, it was difficult to arrive at a reliable measure of how much time would be required for this purpose. It was hypothesised, however, that the time needed would be considerably less than indicated by the test interviews.

It is evident from this foregoing discussion that questionnaire design is essentially a matter of commonsense and experience. It is not

as yet, if indeed it ever can be, a matter of applying theoretical rules.

IV. The Expenditure Diary

As mentioned earlier, diaries would be distributed to willing respondents to allow more accurate estimates of the dollars expended on different goods and services over a period of time in different locations.

There were two options available in the design of this expenditure diary. One was the "open" booklet with no headings excluding the date of purchase and location, while the other type was classified by broad headings of expenditure. Kemsley and Nicholson (1960: 315) found that response rates to the two types of booklet were roughly the same. Therefore, the "closed" type was employed since categories could be used which conformed with those present in the household questionnaire. Also, the task of coding the results would be considerably eased. Absolute dependence would never be placed on the respondents, since interviewers would hand out the diaries, instruct the respondents, supervise the recordings by periodic checks by telephone, and pick-up and review the completed diaries.[2]

One of the most important decisions to make in planning expenditure surveys is the length of time for which each household should be asked to keep records (Kemsley and Nicholson, 1960: 326). If a very short time period is selected, then it is difficult to avoid: (1) double-counting, such as "telescoping" or bringing into the period items

[2]Due to limitations of time and cost, acreage dwellers in the counties of Parkland and Strathcona were asked to mail in completed diaries. In-person instructions and periodic checks by telephone were still maintained.

purchased just before or just after; and (2) the omission of borderline or ambiguous items. If, on the other hand, the time period is too long, then memory errors are more likely. In this study, a month period was judged to be a satisfactory compromise.

Nonetheless, it was anticipated that there would still be the problem of sustaining motivation. It often happens that as the diary period wears on, less and less information is recorded.[3] Pearl (1968: 33) believed that an effective approach would be to arouse the interest of respondents in finding out, for once, where their money is really going. Most people, of course, do not keep records but are aware that somehow their actual expenditures usually outstrip their expectations if not their incomes. Another useful approach in preventing or reducing this "falling-off" effect is by means of telephone calls. Brown (1974) in her study of attitude as a determinant of consumer behaviour, achieved considerable success by this method. Telephone calls would help to make respondents feel that we realise how much work we are asking for, that we are very grateful for their assistance, and that the data really are important for the purpose of our research. It was decided that two weeks would be a wise choice of interval, as more frequent calls would have been both time-consuming for the caller and irritating for the respondent.

At the analysis stage, the researcher must be aware of a number of problems associated with the technique. A basic difficulty is that the ordinary person ordinarily does not have all the information. As anyone knows who has tried to keep track of expenditures, they never add up to the correct total, that is, receipts plus decrease in cash. There are many reasons for this discrepancy such as: (1) "telescoping;

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[3] This is usually attributed to fatigue factors (Pearl, 1968: 43).

(2) people getting tired of writing things down, and when they occurred, or as to which category they belonged to, are simply omitted. Furthermore, there is the danger that the respondent's interest in filling up the diary will cause him to modify the very behaviour we wish him to record (Oppenheim, 1966: 215). Although it would be foolhardy to discount any of these problems, unquestionably the most challenging single issue is the matter of maintaining adequate levels of cooperation.

A copy of the diary appears in Appendix II.

V. The Sampling Procedure

When sampling procedure was being considered, Babbie's (1973: 78) maxim: "A sample will be representative of the population from which it is selected, if all members of the population have an equal chance of being selected in the sample", was used as a guide. In undertaking this task, a major problem facing the researcher is, of course, to avoid bias. This can arise in two main ways: (1) through errors in the selection of the sample, and (2) through chance differences between the members of a population that are included within a sample and those that are not included. As there is no set of rules that will cover every sampling problem, the researcher must be prepared to use his own ingenuity in devising procedures that will provide reasonably unbiased data through a reasonable expenditure of time and effort (Hammond and McCullagh, 1974: 117).

This section discusses the procedure for selecting the householders to be interviewed in the study. The manner in which this is accomplished can have a direct bearing on the conclusions to be drawn and the precision of these conclusions.

In order to properly evaluate the contribution made by commuters and their families to small town and county development, it was arbitrarily decided that samples for each of the four communities should constitute 75 percent commuter households and 25 percent non-commuter households. In this way, any differences in expenditure patterns between the two groups could be ascertained. However, as no published or unpublished material permitted the identification of commuters, a sample of "all" households had to be undertaken from which commuters could be later identified in the field.

A. Sample Design

A systematic sampling procedure was utilised in order to select respondents for interviews. Since it was felt that household units characteristic of the population, were evenly distributed throughout each of the study areas, the systematic sampling procedure seemed appropriate.

Systematic sampling is probably the most widely known selection procedure. It is simple to apply: selection being made from the population at regular intervals. This can be best explained by the following illustration. Suppose a municipal tax assessment roll lists 5,000 households and the researcher desires a sample of 100, he will select every fiftieth household for his sample. To ensure against any possible human bias in using this method, the researcher selects the first household at random using a table of random numbers.[4] Thus, in the above example, he would begin by selecting a random household

[4]The table of random numbers was taken from Arkin, H. & Colton, R.R. Tables for Statisticians (2nd edition). Harper and Row, New York (1963). pp. 158-161.

between 1 and 50; this household would be included in the sample together with every fiftieth household following it. This is technically referred to as a "systematic sample with a random start."

The prime reason for using systematic sampling is that it is much simpler and less time-consuming when an extremely long list is used, as is the case in this study. Furthermore, the procedure is as precise or more so than simple random or stratified random sampling for the reason that systematic sampling is spread more evenly over the population (Cochran, 1963: 206). Random samples, on the other hand, tend to include clusters and leave gaps unless the random sample is very large. There is, however, one danger involved in systematic sampling. The arrangement of elements in a list can make a systematic sample unwise. This danger is usually referred to by the term "periodicity". If the list of elements is arranged in a cyclical pattern that coincides with the sampling fraction, it is possible that a grossly biased sample may be drawn.

B. Sampling Frame

The whole structure of a survey may be determined, to a considerable extent, by the nature of the frame from which the sample is drawn. Thus, for example, the structure of the survey (and indeed the validity of the results) may be affected by the degree of universality of the frame, that is, the frame may be incomplete.

The most comprehensive listing of householders in each community was found to be the current tax assessment rolls, which list the names and addresses of all property owners in the community. Although the names of persons renting homes or apartments are excluded from the list,

the addresses of these buildings are included under the name of the landlord. In the event of an apartment block being selected, the procedure would be to randomly select an individual apartment. Unfortunately, the tax assessment rolls could only be used for the communities of Leduc and Fort Saskatchewan. In St. Albert and Stony Plain, the sample of householders had to be derived from water meter deposit cards, since the civic authorities were engaged in the processing of 1976 property taxes. These listings, however, were comparable in their coverage of households.

In sampling acreage - dwellers in the counties of Parkland and Strathcona, a systematic selection was made from an up-to-date list of registered subdivisions within each county.[5] As these lists failed to indicate whether individual parcels of land within selected acreage subdivisions were developed or undeveloped, the random selection of households was undertaken in the field.

C. Sample Size

Having decided upon the type of sampling method to use and the sampling frame that will be employed, there remains the questions of sample size. Generally speaking, the researcher will endeavour to compromise between precision and the economy of time and effort. For instance, if a sample is too large, too much money will be spent on fieldwork and data processing; if, on the other hand, the sample is too small, the results of the study may be inconclusive.

Two factors should be considered when establishing an appropriate size for the sample. First, the desired precision of estimates of the

[5]Only those subdivisions lying within the study area were included.

population parameters from the sample must be evaluated. Second, the feasibility of the sample size must be assessed in the light of available resources such as time and money (Harvey, 1969: 361-362).

The precision of an estimate of the population mean from a sample, for a particular variable, can be expressed in probability terms. Thus, assuming that the frequency distribution for the population is at least not extremely skewed and that the sample distribution is approximately normal, it can be postulated with a probability of 0.95, that the mean will be within the range of $\mu \pm \frac{2\hat{\sigma}}{\sqrt{n}}$ where "μ" equals the mean of the sample; "$(o)^2$" is the estimate of the population variance from the sample; and "n" denotes the size of the sample.

By specifying an allowable error of the estimate of the population mean at a desired level of confidence, the above expression can be manipulated to derive the appropriate sample size (Snedecor & Cochran, 1967: 516-517).

In practice, however, the researcher encounters considerable problems when attempting to apply this formula because not only is the variance unknown but an estimate of the variance is equally intangible. And in many surveys (including the present study), the desired sample is unattainable in any case because of financial, time and personal limitations. Accordingly, it was prepared to obtain one hundred completed usable questionnaires for each of the four communities and a further fifty questionnaires from acreage dwellers in each of the two counties.

VI. The Survey Procedure

Meetings with civic authorities were utilized in order to acquaint local citizens with the study and its purposes prior to data collection. This effort was felt necessary for two reasons. First, it was

recognised that because of the nature of the data sought, community support would be necessary in order to obtain a satisfactory rate of interview completion. Secondly, the study itself was designed as a community development project and as such, local involvement and support was important. In other words, the study itself would serve as a vehicle promoting community involvement and interaction.

A visit was made to each community prior to the commencement of the interviews in order to become familiar with the community and to make arrangements for data collection. The systematic sampling procedure described previously was decided upon during these visits.

The interview routine was so organised that after a short introduction of the interviewer and the purpose of the interview, the respondent was asked to read through a letter of introduction provided by the municipality (these letters appear in Appendix III). In some cases, it was found necessary to explain the questionnaire and leave it with the family overnight. The completed questionnaire was then picked up the next day. Also, several respondents expressed the concern that the questions being asked were "quite personal". Efforts to obtain information from non-respondents were largely unsuccessful. This may be attributed to the type of question being asked as well as the difficulty of recall.

At the end of each interview, the respondent was asked if he or she would be willing to complete the expenditure diaries during the summer and winter. Where the respondent agreed, a brief instruction was given on how to complete the diary.

Completed questionnaires were checked as they were handed in at the

end of the day in order to ensure that instructions were being followed and that respondents were understanding what was being asked.

VII. The Survey Response

A. The Household Questionnaire

In each of the urban centres, some difficulty was encountered in trying to maintain the designated sample ratio (that is, 75 percent commuters households to 25 percent non-commuters households). As a result, a second systematic sample was necessary in order to obtain one hundred completed usable questionnaires in each community. Admittedly, this sample format means that each aggregate sample is biased since no consideration has been given to the actual proportion of commuter to non-commuter households in each community. Instead, the rationale for the design of each sample was to compare the pattern of expenditures made by commuter households with those by non-commuter households. Whether the two sub-samples (that is, the commuter and non-commuter groups) are representative is impossible to determine since the census does not differentiate between commuter and non-commuter households.

In each rural county, fifty questionnaires were obtained from families living in country residences. Again, it was impossible to determine the representativeness of the samples since the census could not be used for the construction of country residential profiles because the data were not differentiated into rural farm and non-farm categories at the enumeration level.

B. The Expenditure Diary

A total of one hundred and ninety-three diaries were distributed throughout the study area during the summer of 1977. Table 3.1 reveals that, although a minimum of twenty diaries were assigned to each urban

TABLE 3.1

Response to Expenditure Diaries

Municipality	Summer			Winter		
	Total Diaries	Total No.	Returned %	Total Diaries	Total No.	Returned %
Fort Saskatchewan	38	21	55.3	26	16	61.5
Leduc	32	17	53.1	21	17	81.0
St. Albert	31	10	32.3	14	9	64.3
Stony Plain	40	15	37.5	26	16	61.5
Parkland	26	11	42.3	7	3	42.9
Strathcona	26	12	46.2	8	3	37.5
Total	193	86	44.6	102	64	62.7

Source: Expenditure Diary Survey, Summer 1977 and Winter 1977/78.

centre and ten diaries to each county, an anticipated low response rate associated with the mail-back procedure, resulted in additional diaries being distributed in order to ensure an adequate response. Eighty-six diaries were returned in completed form. This was a response rate of 44.6 percent. Sixty-four (or 74.4 percent) of the summer respondents completed a second expenditure diary during the winter of 1977/78 (see Table 3.1).

VIII. The Business Survey

To this point, the chapter has focused solely on the development of a methodological framework for interviewing householders. There is another segment to the study which involves the gathering of objective data regarding: (1) the amount of commercial floor space; (2) the annual sales turnover; and (3) the number of employees; for retail and service business establishments in each of the four urban centres. This information is required in order to measure the impact of expenditures made by commuter families on local commercial activity.

Data pertaining to the square footage of individual retail and service trade outlets were obtained from the business tax assessment cards available in the administrative offices of each municipality. None of the municipalities, however, maintained detailed records on either the annual sales turnover or the number of employees for each business. It was quickly recognised that businessmen would be very reluctant to release this sort of information in a survey. As a result, a search procedure was undertaken for an alternative source.

The most complete source of public information are the commercial records of Dun and Bradstreet (March, 1977), the American credit rating agency. These records provide information regarding the Standard Industrial Classification (SIC) number, the number of employees and the annual sales turnover for each business in their listing. Unfortunately, as the Dun and Bradstreet records usually omitted small businesses employing only one person, there was a considerable discrepancy between these listings and those of the local municipalities. Therefore it was decided that, for the purpose of the analysis, only those businesses present on both listings would be included. This represents 40 percent

of the total number of businesses recorded.

IX. Data Preparation and Manipulation

With the completion of interviewing at the end of the third week of August 1977, 500 interviews had been conducted. The next stage in data preparation was the compilation of a coding manual for the purpose of setting up the data in a form amenable to computer analysis.

A. Data Preparation

In the case of closed-ended questions, there was little difficulty: numerical symbols were simply assigned to the various answer categories. Open-ended questions, however, presented a far greater problem for coding. These were coded in the following manner. First, the entire range of responses for a given question was recorded. Second, responses which were the same or had a common theme, were grouped together. These groupings were then re-examined to see if further breakdown was possible. While this coding scheme ought to be tailored to meet the particular requirements of the analysis, one general rule of thumb should be kept in mind (Babbie, 1973: 192). If the data are coded so as to maintain a great deal of detail, code categories can always be combined during an analysis that does not require such detail. If, however, the data are coded into relatively few, gross categories, there is no way during analysis for recreating the original detail. Once the researcher is satisfied with the coding scheme, each category is then assigned a specific number for the purposes of computer analysis.

To ensure internal consistency in the coding operation, all coding work was carried out by the author. All data was then punched and

electronically verified by professional keypunchers with the University of Alberta.

B. Data Manipulation

The design of the computer programs used in the study permitted separate analyses to be undertaken for commuter, non-commuter and country residential families in the study region.

Initially, a simple frequency analysis was undertaken for all the variables in the household questionnaire using the S.P.S.S. packaged program (Nie et al., 1975). Simple statistical tables were constructed from these and were used to provide a considerable amount of purely descriptive information regarding characteristics pertaining to the commuter, non-commuter and country residential populations. This procedure was carried out for each of the six municipalities studied as well as for the aggregate totals.

For those questions requiring respondents to indicate specific dollar ($) expenditures in the City or in the small urban centres - questions 10, 14, 16b, 17b, 20, 25, 29a, 29b, 31, 38 and 39 (see Appendix I) - basic descriptive statistics such as the mean, median, mode and range (including the maximum and minimum values) were calculated using the M.I.D.A.S. packaged program.[6] This provided information on the spatial allocation of expenditures by commuters, non-commuters and country residents. Again, data were obtained for each municipality as well as for the aggregate totals.

The next stage in the analysis was to identify relationships among attributes in the population. As mentioned in the discussion of the

[6]The changeover to the M.I.D.A.S. packaged program was done for convenience sake only.

research hypotheses in Chapter One, these specifically relate to the association between the spatial allocation of expenditures and various socio-economic and demographic characteristics pertaining to the household. In order to test for these relationships, cross-tabulations (contingency tables) were derived. Chi-square values determined whether relationships were statistically significant at the 0.05 level of significance.

It was possible to analyse by hand the data gathered by the expenditure diaries as only basic descriptive statistics were required.

The summary and results of this analysis are discussed in the next chapter.

CHAPTER FOUR

ANALYSIS

The objectives of this chapter are to determine:

(1) The residential mobility of:

  (a) commuter families;

  (b) non-commuter families;

  (c) country residential families.

(2) The demographic and socio-economic characteristics of:

  (a) commuter families;

  (b) non-commuter families;

  (c) country residential families.

(3) The overall spatial distribution of expenditures for:

  (a) commuter families;

  (b) non-commuter families;

  (c) country residential families.

(4) The manner in which the location of these expenditures varies for different types of goods and services.

(5) The relationship between the socio-economic status of the commuter and country resident and the location of expenditures.

(6) The relationship between the length of residence in a small town or rural acreage subdivision and the location of expenditures.

(7) The relationship between the place of work and the location of expenditures.

I. Residential Mobility

A. Place of Former Residence

The supposition that a large proportion of the periurban population in the Edmonton area formerly resided in the City was substantiated by the questionnaire survey which indicated that more than half (52.3 percent) of the sampled households had previously lived in the City of Edmonton. Table 4.1 does, however, reveal that the number of former City residents does vary considerably between the three population groups.

More than half of the commuter families had indicated the City of Edmonton as their place of former residence compared with less than one-third of non-commuter families. This relatively high proportion of former City residents among the commuter population is evident in all of the small urban centres with the exception of the Town of Leduc, where 44.0 percent of the commuter families and 50.0 percent of the non-commuter families have migrated from outside the Edmonton metropolitan region and only 38.7 percent of commuter families and 37.5 percent of non-commuter families were former residents of the City. The large number of families from outside the region living in Leduc may be the result of the advertising policies of development companies.

The table reveals that approximately two-thirds of the country residential families had lived in the City of Edmonton. This figure, however, is slightly lower than that reported by Ward (1977: 152-153) in a study of country residential development in the Edmonton region. Ward found that more than three-quarters of residents had previously lived in the City and that an additional 4.0 percent of country residents

TABLE 4.1

Households by Location of Former Place of Residence

Former Place of Residence	Commuters		Non-commuters		County Residents	
	No.	%	No.	%	No.	%
Edmonton	161	54.4	30	30.9	67	67.0
Edmonton region	17	5.7	18	18.6	20	20.0
Home community	32	10.8	13	13.4	2	2.0
Rest of Alberta	45	15.2	18	18.6	2	2.0
Out of Province	37	12.5	15	15.5	8	8.0
Out of Canada	4	1.4	3	3.1	1	1.0
Total	296	100.0	97	100.0	100	100.0

Source: Household Questionnaire, 1977.

TABLE 4.2

Distribution of Households by Length of Residence

Duration of Residency	Commuters		Non-commuters		County Residents	
	No.	%	No.	%	No.	%
Up to 1 year	25	8.3	10	10.0	15	15.0
1 - 2 years	106	35.3	12	12.0	35	35.0
3 - 5 years	108	36.0	34	34.0	29	29.0
6 - 10 years	32	10.7	19	19.0	14	14.0
Greater than 10 years	29	9.7	25	25.0	7	7.0
Total	300	100.0	100	100.0	100	100.0

Source: Household Questionnaire, 1977.

who had indicated a smaller urban centre as their place of former residence, had lived in the City immediately prior to that. Unfortunately, the questionnaire used in this study only recorded those households who had moved directly from the City to the smaller urban centre or country residence and therefore ignored those households whose movement out from the City was a two-stage move. As a result, it may be reasonable to assume that the proportion of residents reporting Edmonton as their place of former residence may be slightly under-represented in this study.

B. Length of Residence

As mentioned earlier (in Chapter Two), with the increasing decentralisation of the population from the City of Edmonton, many of the small urban centres in the region have been transformed into residential dormitory communities. This was confirmed by the length of residency of commuter families: 43.6 percent of the families had lived in their homes two years or less and only 9.7 percent reported a length of residency greater than ten years (Table 4.2). In contrast, only 22.0 percent of non-commuter families had a length of residency of two years or less and 25.0 percent had been living in their homes more than ten years.

The rapid population growth in recent years is clearly evident in figures for the small urban centres. For example, more than half (52.0 percent) of commuter families in Leduc had a length of residency of two years of less. Fort Saskatchewan and Stony Plain have slightly lower figures, 46.7 percent and 45.4 percent respectively. In contrast, St. Albert has a relatively small proportion of families (30.7 percent)

with a length of residency of two years or less. This probably reflects the fact that St. Albert was the first community on Edmonton's periphery to experience rapid urbanisation. In each community, non-commuter families have a considerably longer length of residence.

The table also illustrates the relatively recent trend of country residential living in the Edmonton area as 50.0 percent of the respondents have lived in their homes two years or less while only 7.0 percent have lived there longer than ten years. These figures are very similar to those indicated by Ward (1977: 153-154) who found that the majority of country residents (60.0 percent) had resided in their country homes two years or less, and only 8.0 percent reported a length of residency greater than ten years. The differences which exist between residents in Strathcona and Parkland can be explained by the fact that most of the country residential subdivision in the region prior to 1968 was located in the County of Strathcona; since 1968, however, the County of Parkland has become the major area of subdivision activity. Therefore, while almost one-fifth of respondents in Strathcona reported a length of residency greater than ten years, only 2.0 percent of residents in Parkland had lived in their homes this length of time.

C. Why the Respondents Moved to a Small Urban Centre or Country Residence

Since a large number of families have moved out from Edmonton, a number of negative "stress" factors should be identifiable which have pushed the families out, away from the City, into a small town or rural environment. Conversely, a number of positive factors should also be identifiable which have tended to pull or attract families to the small

TABLE 4.3

Reasons For Moving to a Smaller Urban Centre or Country Residence

Reason	Commuters		Non-commuters		Country Residents	
	No.	%	No.	%	No.	%
Lower price of housing	92	26.2	17	14.4	1	0.9
Small town/country atmosphere	89	25.4	32	27.1	61	56.5
Opportunity to buy a house	72	20.5	9	7.6	10	9.3
Job transfer	31	8.8	9	7.6	2	1.9
Close to place of employment or good access to place of employment	26	7.4	25	21.2	1	0.9
Relatives or friends lived in area	15	4.3	9	7.6	1	0.9
Larger house/site available	12	3.4	3	2.5	19	17.6
Attractive municipal design and services	5	1.4	3	2.5	-	-
Health reasons	3	0.9	2	1.7	1	0.9
Opportunity to build house	2	0.6	1	0.85	6	5.6
Proximity to Edmonton	2	0.6	1	0.85	2	1.9
Opened business in home community	1	0.3	3	2.5	-	-
Retirement	1	0.3	2	1.7	1	0.9
Leisure/recreation purposes	-	-	2	1.7	-	-
Built house for investment purposes	-	-	-	-	2	1.9
Desire to be self-sufficient	-	-	-	-	1	0.9
Total	357	99.9	118	99.8	108	100.1

Source: Household Questionnaire, 1977.

town or rural environment. Table 4.3 indicates the responses to question 5 (see Appendix I) which asked respondents to indicate: "What were the reasons for moving to your present home?"

The table reveals that commuter families have been influenced by three major factors which account for almost three-quarters (72.3 percent) of all responses. While a desire to live in a small community has obviously been important, commuter families appear to have been more influenced by the relatively low price of housing in the small urban centres as compared to the City of Edmonton. This is evident in each of the urban centres. The other factors are of relatively minor importance but may also be attributed to aspects or opportunities that the smaller urban centre offers but the City lacks.

Non-commuter families have also been influenced by a strong desire to live in a smaller urban centre. However, they appear to have attached far less importance to the cheaper price of housing as compared to commuter families. Instead, they have indicated proximity to their place of employment as the second most important factor influencing their decision to move to a smaller urban centre. This compares with only 7.4 percent of responses made by commuter families.

The analysis indicated that factors influencing the decision to move to a country residence clearly reflect the "pull" of the rural environment and perhaps the "push" of the urban surroundings since more than half of the respondents indicated a "country atmosphere" as the factor which influenced their decision to move to a country residence (Table 4.3). A further 17.6 percent of families reported the "availability of a large house or site" as important. These findings

are very similar to those identified in other studies of ex-urban development which have stated that the majority of persons residing in fringe areas consistently rate privacy, open space, and peace and quiet among the most important advantages of country living (see, for example, Calgary Regional Planning Commission, 1968; Hodge, 1970; Alberta Land Use Forum, 1974; Carvalho, 1974; Ward, 1977).

II. Characteristics of Commuters and Country Residents

The purpose of this section is to identify socio-economic and demographic characteristics peculiar to the commuter and country residential populations in terms of:

(1) household income

(2) occupation of the head of household

(3) education of the head of household

(4) family size and age-sex distribution.

The data used to derive these characteristics were obtained through the questionnaire survey described in Chapter Three. The characteristics of the commuter population are compared with those of the non-commuter population so that attributes peculiar to commuter families can be readily identified. For the country residential population, direct comparisons are made with those characteristics identified in a recent survey by Ward (1977) of country residents in the Edmonton region.

A. Household Income

Table 4.4 indicates that commuter households generally have higher incomes than non-commuter households: 78.5 percent and 64.0 percent respectively of households reported incomes in excess of $15,000 per

TABLE 4.4

Distribution of Households by Level of Income

Income category	Commuters		Non-commuters		Country Residents	
	No.	%	No.	%	No.	%
under $5,000	-	-	-	-	-	-
$ 5,000 - $9,999	8	2.7	6	6.0	3	3.0
$10,000 - $14,999	57	19.0	30	30.0	12	12.0
$15,000 - $19,999	98	32.7	31	31.0	23	23.0
$20,000 - $24,999	80	26.7	18	18.0	28	28.0
$25,000 - $29,999	38	12.7	7	7.0	19	19.0
$30,000 - $34,999	9	3.0	5	5.0	8	8.0
$35,000 - $39,999	2	0.7	1	1.0	5	5.0
over $40,000	8	2.7	2	2.0	2	2.0
Total	300	100.2	100	100.0	100	100.0

Source: Household Questionnaire, 1977.

annum. With the exception of Fort Saskatchewan, there are no significant variations in the distribution of households by level of income in the small urban centres. The reason for the higher incomes among non-commuter households in Fort Saskatchewan probably reflects the better employment opportunities which have arisen as a result of the area's industrial growth.

The distribution of families living in country residence by level of income is very similar to those identified in recent studies of other major Canadian metropolitan areas in that there is a predominance of middle to upper incomes. More than eighty percent of the country residential households have incomes in excess of $15,000 per annum.

TABLE 4.5

Distribution of Households by Number of Persons Contributing to Total Net Annual Household Income

Number of Persons	Commuters		Non-commuters		Country Residents	
	No.	%	No.	%	No.	%
1	210	70.0	52	52.0	66	66.0
2	83	27.7	46	46.0	32	32.0
3	4	1.3	2	2.0	2	2.0
4	3	1.0	0	0.0	0	0.0
Total	300	100.0	100	100.0	100	100.0

Source: Household Questionnaire, 1977.

Table 4.5 indicates that total household incomes for commuters and country residents are derived predominantly from only one wage-earner. In contrast, almost one-half of non-commuter families indicated that their

TABLE 4.6

Distribution of Households by Occupation

Occupation	Commuters		Non-commuters		Country Residents	
	No.	%	No.	%	No.	%
Managers/proprietors	33	8.3	16	10.9	34	25.6
Professionals/technicians	139	35.0	37	25.2	37	27.8
Service workers	63	15.9	29	19.7	25	18.8
Clerical workers	35	8.8	19	12.9	9	6.8
Sales workers	32	8.1	10	6.8	5	3.8
Craftsmen, tradesmen and other operatives	93	23.4	33	22.4	23	17.3
Labourers	2	0.5	3	2.0	-	-
Total	397	100.0	147	99.9	133	100.1

Source: Household Questionnaire, 1977.

incomes were derived from the employment of two or more household members.

B. Households by Occupation of the Head of Household

The sample population groups display a diverse variety of occupations (Table 4.6). The heads of commuter households show a more marked concentration in the managerial and professional categories than do their counterparts in non-commuter households. A similar pattern is evident in each of the small urban centres. St. Albert does, however, show the greatest difference since almost three-fifths of the heads of commuter families are in managerial and professional occupations compared with less than two-fifths of the heads of non-commuter families.

The table indicates that the occupations of the country residential population show an even more marked concentration in the managerial and professional categories than do their urban counterparts. The figure (53.4 percent) is almost identical to that produced by Ward (1977: 146) who indicated that 51.6 percent of country residents were in these categories.

C. Households by Level of Education

The level of education attained by household heads in the sample population is presented in Table 4.7. It is noticeable that the heads of commuter families have attained a significantly higher level of education than the heads of non-commuter families since 27.4 percent have attended university and a further 29.0 per cent have had some formal training over that obtained through the public school system.

TABLE 4.7

Distribution of Households by Level of Education

Level of Education	Commuters No.	Commuters %	Non-commuters No.	Non-commuters %	Country Residents No.	Country Residents %
Elementary	16	5.3	12	12.0	14	14.0
Secondary	115	38.3	47	47.0	30	30.0
Post-secondary non-university	87	29.0	22	22.0	28	28.0
University	62	20.7	11	11.0	20	20.0
University & Other Training	20	6.7	8	8.0	8	8.0
Total	300	100.0	100	100.0	100	100.0

Source: Household Questionnaire, 1977.

In contrast, only 19.0 percent of non-commuter household heads possess university education and a further 22.0 percent have technical training.

A similar pattern is evident in each of the small urban centres. In St. Albert, however, there is a considerably higher proportion of household heads among the commuter population with post-secondary education than there are in the other communities. The distribution of commuter households by levels of education in St. Albert, therefore, reinforces earlier findings relating to income and education which suggest that commuters in this community are of a higher socio-economic status than their counterparts in the other urban municipalities.

Table 4.7 indicates that the level of education attained by heads of households in the country residential population displays a striking

resemblance to the findings made by Ward (1977: 145) who found that 22.0 percent of household heads had attended university and a further 28.5 percent possessed technical training.

D. Households by Family Size and Age-Sex Distribution

i. Households by Age of Head

The distribution of households by age for the various sample population groups is presented in Table 4.8. It is noticeable that the commuter population is dominated by families with relatively young heads (62.7 percent are under 35 years of age when compared with the non-commuter population, where only 41.0 percent of household heads are under 35 years of age and where a further 46 percent are in the 35-54 year age category.

The differences between the commuter and non-commuter groups are repeated throughout each of the small urban centres with the exception of St. Albert which displays a marked concentration of household heads in the 35-54 year age category. One plausible explanation for this difference is that St. Albert was the first community on Edmonton's periphery to experience rapid urbanisation and remain autonomous from the City. It is quite conceivable that the majority of residents moving to the community in the 1960's had family heads in the 25 to 34 year age category, thus accounting for the high proportion in the 35 to 54 year age category today.

The country residential population is dominated by families with heads slightly older than their counterparts in commuter families: approximately 75.0 percent are under 44 years of age compared with almost 90.0 percent among the commuter population. The distribution in terms of this variable is very similar to that identified by Ward (1977: 134) who indicated that 80.0 percent of household heads were under 44 years of age.

TABLE 4.8

Distribution of Households by Age of Head

Age category	Commuters		Non-commuters		Country Residents	
	No.	%	No.	%	No.	%
under 25	10	3.4	2	2.0	1	1.0
25 - 34	178	59.3	39	39.0	39	39.0
35 - 44	78	26.0	26	26.0	36	36.0
45 - 54	27	9.0	20	20.0	17	17.0
55 - 64	6	2.0	13	13.0	6	6.0
over 65	1	0.3	-	-	1	1.0
Total	300	100.0	100	100.0	100	100.0

Source: Household Questionnaire, 1977.

ii. Households by Number and Age of Children

The distribution of households by number and age of children in the sample population is given in Tables 4.9 and 4.10. First, the commuter and country residential populations have a relatively low proportion of families with no children (Table 4.9). Second, the table reveals that commuter households are slightly larger than non-commuter households in that 70.0 percent of households have two or more children as opposed to 62.0 percent of the non-commuter households. Families residing in country residences are slightly larger as 78.0 percent of households have two or more children. Third, when compared with non-commuter families, the commuter population is over-represented in terms of families with pre-school age children (Table 4.10). The table reveals that the country residential population is dominated by families with children in the 6-14 year grouping. This leads to the conclusion that families tend to move to country residences as, or shortly after, their children reach school age.

On the basis of the information presented above, it can be concluded that commuter families are not only slightly larger than their non-commuter counterparts, but they also have a greater number of pre-school age children. In addition, families are dominated by younger household heads.

Families located on country residences are larger than their urban counterparts. The family heads are slightly older than the heads of commuter families and they do not appear to move to a country residence until their offspring are of school age or slightly older.

TABLE 4.9

Distribution of Households by Number of Children

Number of Children	Commuters		Non-commuters		Country Residents	
	No.	%	No.	%	No.	%
0	26	8.7	16	16.0	11	11.0
1	64	21.3	22	22.0	11	11.0
2	121	40.3	33	33.0	43	43.0
3	65	21.7	23	23.0	22	22.0
4	21	7.0	5	5.0	9	9.0
5 and over	3	1.0	1	1.0	4	4.0

Source: Household Questionnaire, 1977.

TABLE 4.10

Distribution of Households by Age of Children

Age Category	Commuters No.	Commuters %	Non-commuters No.	Non-commuters %	Country Residents No.	Country Residents %
Less than 6 years	330	55.0	77	42.1	85	38.8
6 - 14 years	218	36.3	72	39.3	99	45.2
15 years and over	52	8.7	34	18.6	35	16.0
Total	600	100.0	183	100.0	219	100.0

Source: Household Questionnaire, 1977.

III. Summary of Findings

The foregoing discussion has indicated that the characteristics of the commuter population differ considerably from those of the non-commuter population. Commuter households have slightly higher incomes with well-educated family members. They are more strongly family based and consist of primarily younger families than their non-commuter counterparts.

The characteristics of the country residential population are very similar to those identified by Ward (1977). These findings appear to be typical of fringe residents in other North American cities. They reveal that the country residents are well educated and possess considerably higher incomes than their urban counterparts. Households are even more family based, but consist of slightly older family members than those in commuter families.

IV. Analysis of Expenditure Flows

As mentioned in Chapter One outlining the objectives and scope of this study, the conceptual basis for expressing hypotheses concerning the spatial economic impact of the residential dormitory function can be sought in a metropolis-hinterland framework. At the regional scale, this can be conceived of as a hierarchy of central places with the highest order centre being the dominant metropolis.

Research into various facets of central place theory has produced evidence to support a concept of metropolitan dominance. This concept states that the large metropolitan city will tend to dominate and eventually usurp the functions of smaller centres which lie within its

sphere of influence (Berry, 1960: 112). One aspect which has received considerable attention is the influence of proximity to a large urban centre upon the level of retail and service business activity within small towns and villages. Previous research and theory[1] leads us to posit two conflicting effects: on the one hand, there is a negative direct effect in that the small town businesses will face greater competition than they would in a more remote location since city businesses are able to offer greater variety and lower prices through volume trading. Yet, there is also a positive indirect effect in that the population size of the small town or village will be enhanced by urban proximity. This increase in potential customers may serve to support some local businesses despite competition from the nearby city when, on the other hand, small town businesses in a remote location might suffer a loss of the necessary threshold population through out-migration and be forced to close despite relative freedom from big city competition.

Here, in the Edmonton metropolitan region, small towns and rural counties adjacent to the City have experienced a rapid development of

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[1]See, for example, Berry, B.J.L. (1960) "The Impact of Expanding Metropolitan Communities Upon the Central Place Hierarchy", Annals of the Association of American Geographers, Vol. 50, No. 2, pp. 112-116; Hodge, G. (1965) "The Prediction of Trade Center Viability in the Great Plains", Papers, Regional Science Association, Vol. 15, pp. 87-115; Northam, R.M. (1969) "Population Size, Relative Location, and Declining Urban Centers: Coterminous United States, 1940-1960", Land Economics, Vol. 45, No. 3, pp. 313-322; Parr, J.B. and Denike, K.G. (1970) "Theoretical Problems in Central Place Analysis", Economic Geography, Vol. 46, No. 4, pp. 568-586; Lentz, P.A. and Johansen, H.E. (1975) "Simulating Spatial Decay in a Regional Retail System", Modelling and Simulation, Vol. 6, pp. 1213-1216; Johansen, H.E. and Fuguitt, G.V. (1977) "Population Growth and Retail Decline: Conflicting Effects of Urban Accessibility in American Villages", Paper presented at the Association of American Geographers Annual Meeting at Salt Lake City, Utah.

residential subdivisions over the past decade. Unfortunately, there has been little measurement of the impact of this residential development on local commercial property. It is the contention of the author that this research void has led to a serious underestimation of the revenues to small towns and counties from residential dormitory development.

The purpose of this section will therefore be to examine the spatial distribution of expenditures made by commuter and country residential families in the region. Attention will also be given to the influence of various socio-economic and demographic variables upon these patterns of spending. A discussion of the implications of the findings with respect to small town and county development follows in Chapter Five.

A. Spatial Distribution of Expenditures

Consumers in return for their patronage, demand that commercial facilities satisfy some or all of the following requirements:

- convenient shopping facilities
- competitive prices
- basic merchandise being available
- opportunities for comparison shopping and a variety of merchandise to select from
- specialised goods and services being available.

(City of St. Albert, 1976b: 83)

The importance of each requirement will vary with the item being purchased. For instance, in the purchase of groceries, convenience and competitive prices will be important. In buying goods where personal preference is important, the opportunity for comparison shopping and

a large selection of merchandise will be considered the most important requirement. While for any item being purchased, a consumer will demand, to some degree, that all of the above requirements are satisfied, generally the emphasised requirement will shift progressively down the above list as the time frame of frequency of the item needed progresses from a daily to a weekly to a monthly, seasonal or annual need. Each good is, therefore, assessed differently in terms of where it is purchased and why. Consumers display similar behaviour in their use of service facilities. For this reason, knowledge of consumer behaviour is very important to the local businessman in that it allows the assessment of the market potential for each good and service in the local economy (Feldman, 1967: 25). If a market leakage is occurring, then an understanding of the reasons why consumers travel outside their local retail area is important in order to ensure the viability of local businesses and is essential if attempts are to be made to intercept this leakage.[2]

i. Retail Goods

The spatial distribution of expenditures on retail goods for each of the population groups is presented in Table 4.11. More than half (52.7 percent) of expenditures by commuter families are made right in their home community. This figure, however, is slightly smaller than that for non-commuter families (57.9 percent).

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[2]Studies by Berry, Barnum and Tement (1962); Golledge and Brown (1967); and Clark and Rushton (1970) have shown that decisions by consumers on where to shop do affect the success of retail trade and service establishments.

TABLE 4.11

Spatial Distribution of Retail Expenditures

	Commuters		Non-commuters		Country Residents	
	I	II	I	II	I	II
Edmonton	69,171.75	43.3	18,753.04	38.6	38,645.00	63.6
Edmonton Region	3,114.97	1.9	641.00	1.3	21,663.56	35.7
Home Community	84,175.50	52.7	28,126.00	57.9		
Elsewhere	3,287.99	2.1	1,098.00	2.3	408.97	0.7
Total	159,750.21	100.0	48,618.04	100.1	60,717.53	100.0

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share in Total Sample Expenditures

Source: Household Questionnaire, 1977.

Table 4.12 indicates that the proportion of expenditures made locally by commuter families does vary considerably between the urban centres. For example, families in Fort Saskatchewan and Leduc spend 53.2 percent and 68.8 percent respectively of their expenditures in the local economy which, in each case, is slightly more than their non-commuter counterparts. In contrast, families in St. Albert and Stony Plain spend less than half of their expenditures locally compared to almost sixty percent by non-commuter families. These differences in the proportion spent locally by commuter families generally reflect differences in the variety and quality of retail facilities between each community and the City of Edmonton (see Appendix IV).

Although families living in country residences may do their shopping either in a nearby small town or in the City of Edmonton, it is evident from Table 4.11 that many residents have opted for the City on account of its greater selection and more competitive prices. Table 4.13 shows however, that there is a significant difference in the pattern of spending by residents in the two counties. This no doubt reflects the locational pattern of country residential subdivisions within each county. Figure 2.2 indicates that the major area of concentration of subdivision activity in the County of Strathcona has been in the immediate vicinity of Sherwood Park; country residences in the County of Parkland, on the other hand, have tended to cluster in an area south of the Stony Plain Indian Reserve #135 which is relatively far from the small urban centres of Devon, Spruce Grove and Stony Plain. As a result, residents in Strathcona spend more than two-fifths of their retail expenditures in the nearby small centre compared with less than one-third

TABLE 4.12

Spatial Distribution of Retail Expenditures by Urban Municipality

Municipality	Location	Commuters I	Commuters II	Non-commuters I	Non-commuters II
Fort Saskatchewan	Edmonton	16,281.75	40.9	6,468.00	48.2
	Edmonton Region	1,298.01	3.3	112.00	0.8
	Home Community	21,180.75	53.2	6,817.00	50.8
	Elsewhere	1,036.00	2.6	16.00	0.1
Leduc	Edmonton	10,680.00	29.2	3,713.04	30.7
	Edmonton Region	4.00	0.0	25.00	0.2
	Home Community	25,152.00	68.8	8,012.00	66.3
	Elsewhere	719.01	2.0	335.00	2.8
St. Albert	Edmonton	22,887.75	54.5	4,692.00	39.0
	Edmonton Region	-	-	89.00	0.7
	Home Community	17,910.75	42.6	7,092.00	58.9
	Elsewhere	1,218.96	2.9	164.00	1.4
Stony Plain	Edmonton	19,322.25	46.7	3,880.08	35.0
	Edmonton Region	1,812.96	4.4	415.00	3.7
	Home Community	19,932.00	48.2	6,205.00	56.0
	Elsewhere	314.02	0.8	583.00	5.3

Legend: I. Monthly Expenditures in Dollars Derived from Sample

II: Relative Share in Total Sample Expenditures

Source: Household Questionnaire, 1977.

TABLE 4.13

Spatial Distribution of Retail Expenditures by Rural Municipality

Municipality	Location	Country Residents I	II
Co. of Parkland	Edmonton	20,529.00	71.0
	Edmonton Region	8,281.96	28.6
	Elsewhere	115.99	0.4
Co. of Strathcona	Edmonton	18,116.00	57.0
	Edmonton Region	13,381.16	42.1
	Elsewhere	292.98	0.9

Legend: I Monthly Expenditures in Dollars Derived from Sample

II: Relative Share in Total Sample Expenditures

Source: Household Questionnaire, 1977.

by residents in Parkland.

In both counties, however, accessibility to the City remains the single most important locational factor influencing the pattern of country residential subdivision and development. This dependence upon the City of Edmonton is illustrated by the fact that the proportion of expenditures made by country residents in the City is considerably higher than that by their urban counterparts (Table 4.11).

The analysis of the expenditure diaries yielded similar results in that commuter families spend less in their community of residence than do non-commuter families and also that country residents are far more dependent upon the City than their urban counterparts (see Tables 1 and 2 in Appendix V). Unfortunately, there were insufficient data to analyse the pattern of expenditures for each municipality.

ii. Service Facilities

Table 4.14 demonstrates that commuter families spend a considerably

TABLE 4.14

Spatial Distribution of Service Expenditures

Location	Commuters		Non-commuters		Country Residents	
	I	II	I	II	I	II
Edmonton	63,038.59	53.7	10,840.93	35.0	22,710.00	66.8
Edmonton Region	1,353.15	1.2	395.00	1.3	10,692.93	31.4
Home Community	49,860.75	42.5	19,039.00	61.5		
Elsewhere	3,096.07	2.6	669.00	2.2	602.02	1.8
Total	117.348.56	100.0	30,943.93	100.0	34,004.95	100.0

Legend: I : Monthly Expenditures in Dollars Derived from Sample

II: Relative Share in Total Sample Expenditures

Source: Household Questionnaire, 1977.

TABLE 4.15

Spatial Distribution of Service Expenditures by Urban Municipality

Municipality	Location	Commuters		Non-commuters	
		I	II	I	II
Fort Saskatchewan	Edmonton	13,000.32	45.3	2,598.08	33.1
	Edmonton Region	280.98	1.0	59.00	0.8
	Home Community	15,081.75	52.5	5,198.00	66.2
	Elsewhere	355.02	1.2	-	-
Leduc	Edmonton	7,925.02	33.2	1,864.94	26.0
	Edmonton Region	217.02	0.9	-	-
	Home Community	15,240.00	63.9	5,299.00	73.8
	Elsewhere	479.05	2.0	20.00	0.3
St. Albert	Edmonton	20.870.25	66.0	4,171.97	50.2
	Edmonton Region	42.00	0.1	6.00	0.1
	Home Community	9,920.25	31.4	4,082.00	49.1
	Elsewhere	789.04	2.5	50.00	0.6
Stony Plain	Edmonton	21,243.00	64.1	2,205.94	29.0
	Edmonton Region	813.15	2.5	330.00	4.3
	Home Community	9,618.75	29.0	4,460.00	58.7
	Elsewhere	1,472.96	4.4	599.00	7.9

Legend: I Monthly Expenditures in Dollars Derived from Sample

II: Relative Share in Total Sample Expenditures

TABLE 4.16

Spatial Distribution of Service Expenditures by Rural Municipality

Rural Municipality	Location	Country Residents I	II
Co. of Parkland	Edmonton	8,956.00	64.9
	Edmonton Region	4,808.87	34.9
	Elsewhere	32.00	0.2
Co. of Strathcona	Edmonton	13,754.00	68.1
	Edmonton Region	5,884.06	29.1
	Elsewhere	570.02	2.8

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share of Total Sample Expenditures

Source: Household Questionnaire, 1977.

smaller proportion of their expenditures on local service facilities than do non-commuter families (42.5 percent as opposed to 61.5 percent). Table 4.15 reveals that a similar pattern is evident in each of the small urban centres. It is noticeable, however, that the proportion spent locally by commuter families in Fort Saskatchewan and Leduc is almost double that by commuter families in St. Albert and Stony Plain. This appears to reflect differences in the availability and quality of service facilities between each community and the City of Edmonton (see Appendix IV).

Families living in country residences spend approximately two-thirds of their expenditures in the City of Edmonton with only one-third being received by the nearby small urban centre (Table 4.16). The similar proportion spent locally by residents in each county suggests that proximity to a small urban centre is an insignificant factor influencing the overall spatial pattern of expenditures.

These findings have generally been confirmed by the analysis of the expenditure diaries (see Tables 3 and 4 in Appendix V). The poor response rate to the diaries however did not allow an examination of expenditures for each municipality.

iii. Total Expenditures

The overall spatial distribution of expenditures on retail goods, service facilities, property tax, rent, utilities and educational fees, are presented in Table 4.17. Almost half of commuter expenditures have

TABLE 4.17

Spatial Distribution of Total Expenditures

Location	Commuters		Non-commuters		Country Residents	
	I	II	I	II	I	II
Edmonton	165,241.09	49.7	36,866.05	37.8	72,437.01	64.7
Edmonton Region	5,607.12	1.7	1,166.99	1.2	38,386.98	34.3
Home Community	154,843.99	46.5	57,352.13	58.9		
Elsewhere	7,081.06	2.1	2,049.00	2.1	1,192.99	1.1
Total	332,773.26	100.0	97,434.17	100.0	112,016.98	100.1

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share of Total Sample Expenditures

Source: Household Questionnaire, 1977

TABLE 4.18

Spatial Distribution of Total Expenditures by Urban Municipality

Municipality	Location	Commuters		Non-commuters	
		I	II	I	II
Fort Saskatchewan	Edmonton	38,563.32	47.4	10,856.08	43.2
	Edmonton Region	1,582.99	1.9	172.00	0.7
	Home Community	39,883.92	49.0	14,031.51	55.9
	Elsewhere	1,391.02	1.7	48.00	0.2
Leduc	Edmonton	28,165.27	36.3	7,405.98	30.9
	Edmonton Region	616.02	0.8	25.00	0.1
	Home Community	47,361.56	61.0	16,149.82	67.5
	Elsewhere	1,528.06	2.0	355.00	1.5
St. Albert	Edmonton	51,075.00	58.8	10,494.97	43.1
	Edmonton Region	82.00	0.1	125.00	0.5
	Home Community	33,577.81	38.6	13,502.50	55.5
	Elsewhere	2,175.00	2.5	214.00	0.9
Stony Plain	Edmonton	47,437.50	54.7	8,109.02	33.7
	Edmonton Region	3,326.11	3.8	844.99	3.5
	Home Community	34,020.70	39.2	13,668.30	56.8
	Elsewhere	1,986.98	2.3	1,432.00	6.0

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share of Total Sample Expenditures

Source: Household Questionnaire, 1977.

TABLE 4.19

Spatial Distribution of Total Expenditures by Rural Municipality

Municipality	Location	Country Residents I	II
Co. of Parkland	Edmonton	35,389.01	68.9
	Edmonton Region	15,849.84	30.8
	Elsewhere	147.99	0.3
Co. of Strathcona	Edmonton	37,048.00	61.1
	Edmonton Region	22,537.14	37.2
	Elsewhere	1,045.00	1.7

Legend: I: Monthly Expenditures in Dollars Derived From Sample

II: Relative Share of Total Sample Expenditures

Source: Household Questionnaire, 1977.

occurred in the local economy as opposed to approximately sixty percent by non-commuter families. Table 4.18 reveals that commuter families in Fort Saskatchewan and Leduc spend considerably more of their expenditures right in their own community than do their counterparts in St. Albert and Stony Plain. In all cases, however, the proportion spent locally is smaller than that by non-commuter families.

The Country residential population spends a relatively small proportion of their expenditures in a nearby small urban centre - approximately two-thirds goes to the City of Edmonton (Table 4.17).

Table 4.19 reveals that there is a small difference in the pattern of expenditures made by residents in the two counties. As mentioned earlier, a more favourable location with regard to urban services means that families living in country residences in the County of Strathcona spend a larger proportion of their expenditures in a nearby small centre than their rural counterparts in the County of Parkland. These findings, therefore, suggest that the location of country residential subdivisions may have an important effect on the economy of small urban centres within the metropolitan region.

B. Estimated Spatial Distribution of Expenditures

As a simple check of the validity of responses to those questions which required a detailed breakdown of the location of expenditures for different goods and services, question 25 in the household questionnaire (see Appendix I) asked respondents to estimate (in aggregate terms) the proportion of their total monthly expenditures made locally

TABLE 4.20

Estimated Spatial Distribution of Total Expenditures by Urban Municipality

Municipality	Location	% Share of Monthly Expenditures Commuters	Non-commuters
Fort Saskatchewan	Edmonton	45.1	37.9
	Edmonton Region Home Community	54.9	62.0
	Elsewhere		
Leduc	Edmonton	34.3	27.7
	Edmonton Region Home Community	65.5	72.3
	Elsewhere		
St. Albert	Edmonton	58.7	51.0
	Edmonton Region Home Community	41.3	49.0
	Elsewhere		
Stony Plain	Edmonton	54.1	37.1
	Edmonton Region Home Community	45.9	60.5
	Elsewhere		
Total	Edmonton	47.7	37.6
	Edmonton Region Home Community	52.2	61.7
	Elsewhere		

Source: Household Questionnaire, 1977.

TABLE 4.21

Estimated Spatial Distribution of Total Expenditures by Rural Municipality

Municipality	Location	% Share of Monthly Expenditures
Co. of Parkland	Edmonton	78.0
	Edmonton Region / Home Community	21.8
	Elsewhere	—
Co. of Strathcona	Edmonton	64.1
	Edmonton Region / Home Community	35.8
	Elsewhere	—
Total	Edmonton	70.9
	Edmonton Region / Home Community	28.9
	Elsewhere	—

Source: Household Questionnaire, 1977.

as opposed to the City.[3] Tables 4.20 and 4.21 indicate that, although there is a close correspondence between the findings presented here and those in Tables 4.17, 4.18, and 4.19, respondents have consistently made a slight over-estimation of the proportion of their expenditures made locally. Country residents, on the other hand, have consistently over-estimated the proportion of their expenditures made in the City. Despite these differences, it appears that the foregoing analysis has provided a good indication of the pattern of expenditures made by commuter and country residential families in the study region.

C. Summary of Findings

Although commuter families do spend less in their area of residence than do families employed locally, the foregoing analysis does illustrate the high degree to which the needs for goods and services are able to be satisfied locally in the small towns; the City of Edmonton serves to satisfy the complement of goods and services demanded. Commuter families in the Towns of Fort Saskatchewan and Leduc actually spend more locally than they do in the City. It may therefore be suggested that, relative to the value of receipts for sales and services, the expenditures made by commuter families in their community of residence are larger than those in the City. Unfortunately, data are not available to examine this contention.

The country residential population, however, is far more dependent

[3] Respondents experienced considerable difficulty in attaching actual dollar figures to each location - as evidenced by the small number of responses to this portion of the question. Therefore, comparisons were only possible using percentage values.

upon the City of Edmonton for goods and services: only one-third of their expenditures are made in a nearby small urban centre.

V. Location of Expenditures by Type of Good or Service

It was hypothesised that the location of expenditures made by commuter and country residential families varies according to the type of good or service demanded. In order to ascertain this, questions 10 and 20 in the household questionnaire (see Appendix I) were used to elicit information on various categories of shopping goods and service facilities respectively. The results of this analysis are presented below.

A. Retail Goods

As expected, Table 4.22 indicates that certain categories of goods were purchased in the home community more frequently than others. More than three-quarters of commuter expenditures on groceries, drugstore items, pet shop merchandise and liquor are made locally. A similar proportion is spent locally by non-commuter families. Both groups reported that convenience was the dominant reason for their local purchase. Country residents, spend a relatively small proportion of their expenditures on these goods in nearby small centres. There is, however, a significant variation between the rural municipalities, as the proportion spent locally by country residents in Strathcona is considerably greater than that by residents in Parkland.

Hardware and lumber are also purchased mainly in the home community-but again the proportion spent locally by commuters is slightly lower

TABLE 4.22

Spatial Distribution of Expenditures by Shopping Good

Product	Location of Expenditures	Commuters I	Commuters II	Non-commuters I	Non-commuters II	Country Residents I	Country Residents II
Groceries	Edmonton	8,525.94	13.9	3,421.94	17.0	9,183.98	38.2
	Edmonton Region	-	-	137.00	0.7	14,833.20	61.7
	Home Community	53,018.33	86.1	16,535.61	82.3		
	Elsewhere	-	-	-	-		
Drugstore	Edmonton	782.89	12.7	150.03	7.4	934.05	43.2
	Edmonton Region	44.50	0.7	10.00	0.5	1,072.19	56.8
	Home Community	5,328.60	86.6	1,859.32	92.1		
	Elsewhere	-	-	-	-	-	-
Everyday clothing	Edmonton	9,838.19	75.9	2,976.38	69.2	4,368.96	89.4
	Edmonton Region	-	-	23.00	0.5	497.96	10.1
	Home Community	2,793.87	23.5	1,299.96	30.2		
	Elsewhere	72.00	0.6	-		21.00	0.4
Formal clothing	Edmonton	4,340.16	94.2	1,463.00	92.5	1,629.94	94.5
	Edmonton Region	-	-	-	-	95.00	5.5
	Home Community	265.96	5.8	118.04	7.5		
	Elsewhere	-	-	-	-	-	-
Hardware	Edmonton	1,953.05	38.6	351.12	26.1	1,657.02	61.9
	Edmonton Region	8.00	0.2	21.99	1.6	1,019.97	38.1
	Home Community	2,966.59	60.2	972.72	72.3		
	Elsewhere	-	-	-	-	-	-
Major electrical appliances	Edmonton	7,278.03	85.9	1,909.84	67.9	2,377.76	97.9
	Edmonton Region	60.00	0.7	33.00	1.5	52.00	2.1
	Home Community	1,093.05	12.9	880.14	30.6		
	Elsewhere	43.00	0.5	-	-	-	-
Minor electrical appliances	Edmonton	647.78	85.4	174.04	73.1	135.91	93.8
	Edmonton Region	2.00	0.3	-	-	9.00	6.2
	Home Community	108.04	14.2	64.00	26.9		
	Elsewhere	1.00	0.1	-	-	-	-
Furniture	Edmonton	6,686.60	91.9	1,993.96	86.6	3,664.26	99.5
	Edmonton Region	-	-	-	-	17.01	0.5
	Home Community	590.97	8.1	239.96	10.5		
	Elsewhere	-	-	67.00	2.9	-	-
Pet shop merchandise	Edmonton	242.04	23.4	23.00	11.4	361.02	49.5
	Edmonton Region	-	-	-	-	369.04	50.5
	Home Community	794.28	76.6	177.92	88.6		
	Elsewhere	-	-	-	-	-	-
Camping/ sporting goods	Edmonton	2,409.99	74.7	934.20	63.2	1,082.96	83.7
	Edmonton Region	102.00	3.2	83.00	5.6	208.00	16.1
	Home Community	629.02	19.5	460.95	31.2		
	Elsewhere	86.99	2.7	-	-	3.00	0.2
Jewellery/ furs	Edmonton	864.94	76.4	285.00	83.6	434.95	96.2
	Edmonton Region	12.00	1.4	-	-	14.00	3.3
	Home Community	180.08	21.8	56.04	16.4		
	Elsewhere	3.00	0.3	-	-	2.00	0.4
Automobiles	Edmonton	22,171.85	67.0	4,312.90	52.5	5,452.96	87.1
	Edmonton Region	2,686.00	8.1	300.00	3.7	914.01	9.9
	Home Community	5,219.94	15.1	2,582.18	31.5		
	Elsewhere	3,036.97	9.2	1,015.02	12.4	331.00	3.4
Liquor	Edmonton	321.07	4.9	132.02	7.5	548.94	26.2
	Edmonton Region	41.00	0.6	29.01	1.5	1,523.11	73.8
	Home Community	6,198.22	94.5	1,727.23	91.5		
	Elsewhere	-	-	-	-	-	-
Lumber	Edmonton	1,849.94	28.8	241.92	20.0	2,717.00	77.8
	Edmonton Region	118.01	2.1	4.00	0.3	747.06	21.4
	Home Community	3,849.87	69.0	954.00	78.7		
	Elsewhere	8.00	0.1	12.00	1.0	29.00	0.8
Shoes	Edmonton	2,450.75	69.7	793.80	66.4	1,272.94	87.9
	Edmonton Region	-	-	-	-	169.87	11.7
	Home Community	1,026.70	29.2	397.80	33.3		
	Elsewhere	38.00	1.1	4.00	0.3	6.00	0.4
Total	Edmonton	86,771.20	43.3	18,753.15	38.6	38,644.57	63.8
	Edmonton Region	3,073.01	1.9	641.00	1.3	21,540.60	35.6
	Home Community	84,173.52	52.7	28,125.87	57.9		
	Elsewhere	3,397.96	2.1	1,096.02	2.3	407.00	0.7

Legend: I: Monthly Expenditures in Dollars Derived From Sample

II: Relative Share of Total Dollar Expenditures

Source: Household Questionnaire, 1977.

than that by non-commuters. Convenience was the dominant reason for these local purchases followed by the price level. In contrast, country residents spent more than three-fifths of their expenditures on these goods in the City of Edmonton where the range of prices and quality were considered important.

For the rest of the shopping goods, the major share of commuter expenditures are made in the City on account of the greater selection of merchandise and the competitiveness of price. Non-commuter families also spend a high proportion of their expenditures in Edmonton, but the table does indicate that they do spend more locally than do commuter families. Families living in country residences are almost totally dependent on the City of Edmonton for these higher order goods.

From the foregoing discussion, it is evident that the proportion of expenditures made locally by commuter families is higher for those goods which are lower priced, purchased frequently and for which variety is not important. For higher order, durable goods, however, a large proportion and in many instances the majority of expenditures are made in the City where the time, inconvenience and cost of travel are insignificant to the price and importance of variety in the selection of the article. In some instances, however, where the small town retailer has been able to compete with the City, the proportion of expenditures made locally has increased. This behaviour is very similar to that displayed by non-commuter families.

Families living in country residences are far more dependent upon the City for their shopping requirements. They not only spend a larger proportion of their expenditures on higher-order durable goods in

Edmonton than do their urban counterparts, but many of their purchases of convenience items are also made in the City. The analysis does, however, reveal that the degree of dependence upon the City appears to be related to the location of country residences relative to a small urban centre.

Similar findings were revealed by both the summer and winter expenditure diaries (see Tables 1 and 2 in Appendix V). Where differences do exist, these are generally the result of the small number of observations.

B. Service Facilities

The pattern of expenditures made by each population group were investigated for several categories of service: medical, recreational, personal, professional, clubs, entertainment, and place of worship. The results of this analysis are presented below:

i. Medical Facilities[4]

Commuter families, for the most part, use local facilities. More than two-thirds of families had a local general practitioner from whom they obtained medical services. They spend more than ninety percent of expenditures for the pharmacy and veterinarian right in their own community; also, approximately sixty percent of chiropractic and dental

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[4]The analysis of the pattern of expenditures for medical facilities is complicated by the fact that, in many instances, a direct payment is not involved. Such services are covered by a Provincial (and in some instances, a company) health care insurance scheme. Despite this, the following results are considered a good indication of the overall spatial pattern of expenditures.

TABLE 4.23

Spatial Distribution of Expenditures

- Medical Facilities

Facility	Location of Expenditures	Commuters I	Commuters II	Non-commuters I	Non-commuters II	Country Residents I	Country Residents II
Doctor		N/A	N/A	N/A	N/A	N/A	N/A
Dentist	Edmonton	1345.94	39.1	269.12	25.2	677.9	52.0
	Edmonton Region	39.00	1.1	-	-	626.94	48.0
	Home Community	2053.14	59.6	798.08	74.8		
	Elsewhere	8.00	0.2	-	-	-	-
Orthodontist	Edmonton	3.00	100.0	25.00	100.0	-	-
	Edmonton Region	-	-	-	-	-	-
	Home Community	-	-	-	-		
	Elsewhere	-	-	-	-	-	-
Optometrist	Edmonton	316.07	53.2	107.91	44.1	107.93	62.8
	Edmonton Region	19.97	3.4	6.99	2.9	64.06	37.2
	Home Community	254.82	42.9	130.02	53.1		
	Elsewhere	3.00	0.5	-	-	-	-
Pediatrician		N/A	N/A	N/A	N/A	N/A	N/A
Specialist		N/A	N/A	N/A	N/A	N/A	N/A
Hospital		N/A	N/A	N/A	N/A	N/A	N/A
Clinic		N/A	N/A	N/A	N/A	N/A	N/A
Pharmacy	Edmonton	119.03	4.8	25.00	2.7	339.97	43.3
	Edmonton Region	58.00	2.4	29.00	3.1	445.08	56.7
	Home Community	2280.76	92.8	877.80	94.2		
	Elsewhere	-	-	-	-	-	-
Veterinairan	Edmonton	6.00	2.1	6.0	6.3	61.00	16.8
	Edmonton Region	8.00	2.8	-	-	301.07	83.2
	Home Community	267.07	95.0	88.92	93.7		
	Elsewhere	-	-	-	-	-	-
Chiropracter	Edmonton	20.00	40.00	-	-	42.99	59.7
	Edmonton Region	-	-	-	-	29.01	40.3
	Home Community	30.00	60.00	8.00	100.0		
	Elsewhere	-	-	-	-	-	-
Total Medical Facilities	Edmonton	1810.04	26.5	433.03	18.3	1229.79	45.6
	Edmonton Region	124.97	1.8	35.99	1.5	1466.16	54.4
	Home Community	4885.79	71.5	1902.82	80.2		
	Elsewhere	11.0	0.2	-	-	-	-

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share of Total Sample Expenditures

N/A: Data not available.

Source: Household Questionnaire, 1977.

expenses occur locally (Table 4.23). These figures, however, are still slightly smaller than those for non-commuters. For more specialist medical services, the proportion of expenditures made locally does decrease for both groups. Overall, the table reveals that almost three-quarters of medical expenses for commuters occur in the home community. This compares with a figure of approximately eighty percent for non-commuters. Differences between the urban centres in the proportion of expenditures made locally by commuter families reflect differences in the availability and quality of medical facilities in each community. The proportion spent locally by non-commuters varies in exactly the same fashion.

With the exception of veterinary services, small urban centres within the region receive a considerably smaller proportion of expenditures made by families living in country residences. Families in Strathcona do, however, make far greater use of local facilities than do their rural counterparts in Parkland. This no doubt reflects the more favourable location of residents in Strathcona to a small urban centre.

ii. Recreational Facilities

Table 4.24 reveals that commuter families have very similar spending patterns to those of non-commuter families in that almost ninety percent of expenditures occur right in their own community. The small differences which exist between the urban centres regarding the proportion spent locally reflect differences in the availability of recreational facilities in each community. Each centre, however, still receives more than eighty percent of commuter and non-commuter

TABLE 4.24

Spatial Distribution of Expenditures

- Recreational Facilities

Facility	Location	Commuters I	Commuters II	Non-commuters I	Non-commuters II	Country Residents I	Country Residents II
Curling	Edmonton	151.03	39.4	-	-	15.01	46.9
	Edmonton Region	4.00	1.0	2.00	2.2	16.99	53.1
	Home Community	227.98	59.5	97.80	87.04		
	Elsewhere	-	-	-	-	-	-
Ice Rings	Edmonton	17.01	4.5	-	-	16.00	10.7
	Edmonton Region	-	-	-	-	133.99	89.3
	Home Community	359.12	95.5	118.00	100.00		
	Elsewhere	-	-	-	-	-	-
Bowling alleys	Edmonton	50.99	8.4	18.00	10.7	80.00	62.0
	Edmonton Region	-	-	1.00	0.6	48.95	38.0
	Home Community	553.90	91.6	148.96	88.7		
	Elsewhere	-	-	-	-	-	-
Pool halls	Edmonton	2.00	3.9	-	-	3.00	100.0
	Edmonton Region	4.00	7.8	-	-	-	-
	Home Community	45.00	88.2	24.00	100.0		
	Elsewhere	-	-	-	-	-	-
Swimming pool	Edmonton	51.00	9.5	10.00	6.7	10.99	6.4
	Edmonton Region	36.99	6.9	15.00	10.0	160.08	93.6
	Home Community	446.40	83.5	125.00	83.3		
	Elsewhere	-	-	-	-	-	-
Bingo	Edmonton	15.00	4.4	5.00	4.0	55.98	96.6
	Edmonton Region	2.00	0.6	-	-	-	-
	Home Community	323.02	95.0	118.95	96.0		
	Elsewhere	-	-	-	-	2.0	3.4
Community Centre	Edmonton	-	-	-	-	-	-
	Edmonton Region	-	-	-	-	61.00	100.0
	Home Community	161.93	100.0	34.00	100.0		
	Elsewhere	-	-	-	-	-	-
Golf	Edmonton	-	-	-	-	2.00	3.8
	Edmonton Region	2.00	2.7	-	-	51.00	96.2
	Home Community	72.01	97.3	54.99	100.0		
	Elsewhere	-	-	-	-	-	-
Others	Edmonton	19.00	14.2	40.00	38.8	9.00	17.3
	Edmonton Region	16.00	11.9	7.00	6.8	43.00	82.7
	Home Community	99.01	73.9	56.00	54.4		
	Elsewhere	-	-	-	-	-	-
Total Recreational Facilities	Edmonton	306.05	11.5	73.00	8.4	191.98	27.1
	Edmonton Region	64.99	2.4	25.00	2.9	515.01	72.6
	Home Community	2288.37	86.0	766.94	88.7		
	Elsewhere	-	-	-	-	2.00	0.3

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share of Total Sample Expenditures

Source: Household Questionnaire, 1977.

TABLE 4.25

Spatial Distribution of Expenditures

- Personal Service Facilities

Facility	Location	Commuters		Non-commuters		Country Residents	
		I	II	I	II	I	II
Laundry/dry cleaner	Edmonton	82.01	5.0	11.01	1.8	169.98	35.0
	Edmonton Region	4.00	0.2	-	-	315.88	65.0
	Home Community	1549.27	94.7	605.25	98.2		
	Elsewhere	-	-	-	-	-	-
Hairdresser/ barber	Edmonton	766.06	28.2	165.00	19.0	387.99	51.5
	Edmonton Region	19.99	0.7	8.00	0.9	364.97	48.5
	Home Community	1930.24	71.1	696.75	80.1		
	Elsewhere	-	-	-	-	-	-
Car/truck repair	Edmonton	1613.80	45.3	254.02	19.0	944.00	71.1
	Edmonton Region	105.00	2.6	42.00	3.1	382.99	28.9
	Home Community	1954.96	48.9	1029.28	77.1		
	Elsewhere	126.01	3.2	9.00	0.7	-	-
Vehicle rental	Edmonton	31.00	63.3	29.01	96.7	110.00	100.0
	Edmonton Region	-	-	1.00	3.3	-	-
	Home Community	18.00	36.7	-	-		
	Elsewhere	-	-	-	-	-	-
Post office	Edmonton	42.97	5.2	2.00	0.7	29.99	8.8
	Edmonton Region	-	-	-	-	309.18	91.2
	Home Community	789.52	94.8	288.00	99.3		
	Elsewhere	-	-	-	-	-	-
Plumber	Edmonton	21.00	5.2	3.00	2.9	2.00	12.5
	Edmonton Region	2.00	0.5	-	-	6.00	37.5
	Home Community	379.94	94.3	102.87	97.2		
	Elsewhere	-	-	-	-	8.00	50.0
Electrician	Edmonton	15.00	4.3	3.00	5.2	41.00	62.1
	Edmonton Region	-	-	-	-	9.00	13.6
	Home Community	331.09	95.7	55.05	94.8		
	Elsewhere	-	-	-	-	16.00	24.2
Gasoline station	Edmonton	5263.11	30.5	322.96	6.0	3811.07	52.3
	Edmonton Region	195.00	1.1	120.00	2.2	3421.06	47.0
	Home Community	11718.84	68.0	4972.71	91.8		
	Elsewhere	51.00	0.3	-	-	50.00	0.7
Total Personal Services	Edmonton	8034.95	29.5	790.00	9.1	5496.03	53.0
	Edmonton Region	325.99	1.2	171.00	2.0	4809.08	46.3
	Home Community	18671.86	68.6	7749.91	88.9		
	Elsewhere	177.01	0.7	9.00	0.1	74.00	0.7

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share of Total Samples Expenditures

Source: Household Questionnaire, 1977.

expenditures.

Almost three-quarters of expenditures made by families residing in country residences occur in small urban centres. Little difference exists in the proportion spent locally by residents in the two counties.

iii. Personal Services

Although more than two-thirds of commuter expenditures occur locally, this figure is considerably smaller than that for non-commuter families (Table 4.25). The table does indicate that for many of the services little difference exists between commuter and non-commuter families in the proportion spent locally. The most striking differences, however, occur for hairdressers and barbers, and for various automative services. The home community, nonetheless, still receives the major share of these expenditures. Differences between the urban centres in the proportion spent locally again reflect differences in the availability and quality of local facilities.

Table 4.25 reveals that families living in country residences spend a smaller proportion of their expenditures in a local small centre. There is, however, a wide difference in the pattern of spending by residents in the two counties. This is most pronounced among lower order services. Families in Strathcona spend more than half of their expenditures in small urban centres compared with less than two-fifths by families in Parkland. This situation reflects differences in the ease of access (in terms of convenience) of residents to personal services available in the small community.

TABLE 4.26

Spatial Distribution of Expenditures

- Professional Services

Facility	Location	Commuters		Non-commuters		Country Residents	
		I	II	I	II	I	II
Bank	Edmonton	30,738.20	67.5	4,663.00	56.7	4,850.13	76.8
	Edmonton Region	90.98	0.2	1.00	0.0	1,300.16	20.6
	Home Community	13,006.07	28.6	3,084.14	37.5		
	Elsewhere	1,710.99	3.8	472.00	5.7	164.00	2.6
Insurance	Edmonton	9,546.81	62.7	1,781.06	36.8	6,038.24	83.2
	Edmonton Region	303.00	2.0	40.00	0.8	925.01	12.8
	Home Community	4,352.86	28.6	2,833.83	58.5		
	Elsewhere	1,035.00	6.8	188.00	3.9	291.02	4.0
Lawyer	Edmonton	970.02	69.1	64.02	55.2	515.94	93.1
	Edmonton Region	5.00	0.4	-	-	38.00	6.9
	Home Community	369.04	26.3	52.02	44.8		
	Elsewhere	59.00	4.2	-	-	-	-
Accountant	Edmonton	133.08	65.5	34.02	32.7	166.01	98.8
	Edmonton Region	8.00	3.9	-	-	2.00	1.2
	Home Community	51.01	25.1	69.96	67.3		
	Elsewhere	11.00	5.4	-	-	-	-
Total Professional Services	Edmonton	41,388.11	66.3	6,542.10	49.3	11,570.32	81.0
	Edmonton Region	406.98	0.7	41.00	0.3	2,265.17	15.9
	Home Community	17,779.98	28.5	6,039.95	45.5		
	Elsewhere	2,815.99	4.5	660.00	5.0	455.02	3.2

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share of Total Sample Expenditures

Source: Household Questionnaire, 1977.

iv. Professional Services

The City of Edmonton receives approximately two-thirds of expenditures made by commuter families on professional services compared with only half by non-commuter families (Table 4.26). Differences in the proportion spent locally by commuter families in the urban centres reflect differences in the availability and quality of professional business services in each community. In each centre, however, commuter families spend a smaller proportion of their expenditures locally than do non-commuter families.

When compared to their urban counterparts, the country residential population make even less use of facilities available in a local small centre. Table 4.26 indicates that more than eighty percent of their expenditures accrue to the City.

v. Clubs and Organisations

Table 4.27 shows that non-commuter families rely almost entirely on local clubs and organisations: more than ninety-five percent of their expenditures occur right in the home community. Commuter families, on the other hand, are slightly less dependent on local facilities: only three-quarters of their expenditures accrue to the local economy. Differences in the proportion spent locally by commuter families among the urban centres reflect differences in the availability and quality of facilities in each community compared with the City.

The country residential population make comparatively little use of local clubs and organisations: small urban centres receive less than one-fifth of their expenditures.

TABLE 4.27

Spatial Distribution of Expenditures

- Clubs and Organisations

Facility	Location	Commuters		Non-commuters		Country Residents	
		I	II	I	II	I	II
Social	Edmonton	222.0	33.7	2.00	1.2	75.99	82.6
	Edmonton Region	9.0	1.4	1.00	0.6	15.99	17.4
	Home Community	427.04	64.9	165.96	98.2		
	Elsewhere	-	-	-	-	-	-
Service	Edmonton	89.99	19.4	-	-	20.01	55.6
	Edmonton Region	-	-	4.00	6.2	16.00	44.4
	Home Community	371.08	80.0	61.04	93.8		
	Elsewhere	3.00	0.6	-	-	-	-
Political	Edmonton	-	-	-	-	-	-
	Edmonton Region	-	-	-	-	-	-
	Home Community	4.99	100.0	1.0	100.0		
	Elsewhere	-	-	-	-	-	-
Sports	Edmonton	147.00	28.2	6.0	5.1	378.00	90.0
	Edmonton Region	5.01	1.0	-	-	42.0	10.0
	Home Community	369.96	70.9	111.02	94.9		
	Elsewhere	-	-	-	-	-	-
Others	Edmonton	17.00	10.2	1.00	3.0	3.00	15.8
	Edmonton Region	-	-	-	-	14.00	73.7
	Home Community	150.00	89.8	32.00	97.0		
	Elsewhere	-	-	-	-	2.00	10.5
Total Clubs and Organisations	Edmonton	475.99	26.2	9.00	2.3	477.00	84.1
	Edmonton Region	14.01	0.8	5.00	1.3	87.99	15.5
	Home Community	1323.07	72.9	371.02	96.4		
	Elsewhere	3.00	0.2	-	-	2.00	0.4

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share of Total Sample Expenditures

Source: Household Questionnaire, 1977.

TABLE 4.28

Spatial Distribution of Expenditures

- Entertainment Facilities

Facility	Location	Commuters		Non-commuters		Country Residents	
		I	II	I	II	I	II
Taverns, bars lounges	Edmonton	1428.10	65.1	329.04	52.1	332.93	65.4
	Edmonton Region	58.00	2.6	13.00	2.1	176.04	34.6
	Home Community	706.07	32.2	289.13	45.8		
	Elsewhere	-	-	-	-	-	-
Movies	Edmonton	913.66	78.2	323.83	76.0	320.89	94.4
	Edmonton Region	-	-	-	-	19.00	5.6
	Home Community	254.00	21.8	102.80	24.0		
	Elsewhere	-	-	-	-	-	-
Restaurants, snack bars	Edmonton	6288.99	78.1	1851.20	72.2	2327.85	82.5
	Edmonton Region	20.00	0.2	8.00	0.3	494.98	17.5
	Home Community	1745.82	21.7	705.20	27.5		
	Elsewhere	-	-	-	-	-	-
Dances, discos, shows, concerts	Edmonton	975.01	74.5	258.06	73.7	190.00	81.5
	Edmonton Region	42.99	3.3	6.00	1.7	40.00	17.2
	Home Community	290.01	22.2	86.00	24.6		
	Elsewhere	-	-	-	-	3.00	1.3
Spectator spurts	Edmonton	890.01	93.2	151.11	73.3	227.99	86.4
	Edmonton Region	1.00	0.1	-	-	31.00	11.7
	Home Community	64.04	6.7	55.00	26.7		
	Elsewhere	-	-	-	-	5.00	1.9
Total Entertainment	Edmonton	10,495.77	76.1	2,913.24	69.7	3,399.66	81.6
	Edmonton Region	121.99	0.9	27.00	0.6	761.02	18.3
	Home Community	3,183.93	23.1	1,237.41	29.6		
	Elsewhere	-	-	-	-	8.00	0.2

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share of Total Sample Expenditures

Source: Household Questionnaire, 1977.

TABLE 4.29

Spatial Distribution of Expenditures

- Place of Worship

Facility	Location	Commuters I	Commuters II	Non-commuters I	Non-commuters II	Country Residents I	Country Residents II
Place of Worship	Edmonton	324.93	11.9	81.00	7.1	312.00	33.2
	Edmonton Region	184.00	6.7	90.00	7.9	626.93	66.8
	Home Community	2,196.83	80.3	970.88	85.0		
	Elsewhere	30.00	1.1	-	-	-	-

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share of Total Sample Expenditures.

Source: Household Questionnaire, 1977.

vi. Entertainment

The lack of variety and quality of entertainment facilities in each of the small urban centres means that the City of Edmonton receives a large proportion of expenditures by both commuter and non-commuter families (Table 4.28). Differences in the availability and quality of facilities available in each community account for the large differences in the proportion of expenditures spent locally by commuter families.

Families living in country residences in general make even greater use of City facilities: more than eighty percent of their expenditures take place in Edmonton.

vii. Place of Worship

When compared with non-commuter families, Table 4.29 indicates that commuter families also spend a high proportion of their expenditures right in their community of residence. Families living in country residences, however, spend a considerably smaller proportion of their expenditures in a local small centre.

C. Summary of Findings

It is evident from the foregoing discussion that commuter families generally use local facilities for those services which are demanded frequently and for which variety and quality are not quite so important. For higher order services, for which variety and quality are important, commuter families tend to spend a high proportion of their expenditures in the City of Edmonton. Non-commuter families display similar behaviour, though they do spend slightly more in their area of residence.

The country residential population is far more dependent upon the

City than their urban counterparts. It is evident, however, that the location of country residential subdivisions relative to small urban centres within the metropolitan region has a significant influence on the spatial distribution of expenditures.

The small number of observations in both the summer and winter expenditure diaries did not permit a detailed analysis of the location of service expenditures. However, Tables 3 and 4 in Appendix V do reveal that the aggregate spatial distribution of expenditures for each of the above service categories are very similar to those indicated in the foregoing discussion.

VI. Socio-Economic Status as a Factor Affecting the Location-of-Purchase Decision

It was hypothesised that various socio-economic household characteristics (such as income, occupation, education, and family size and age-sex distribution) are influential in altering the location-of-purchase decision made by commuter and country residential families. In order to test for these relationships, each of the socio-economic variables (the independent variables) has been cross-tabulated against the dependent variables, the proportion of expenditures made locally. Chi square values were calculated in order to test whether these relationships were significant at the 0.05 level of significance. The results of these cross-tabulations are presented below:

A. Income

Previous research has established that a negative relationship exists between the level of income and the proportion of expenditures

made locally. That is, residents in middle to upper income households will spend less in their area of residence than those in lower income households.

Although the analysis indicates that no significant relationships emerge for either commuter or country residential families, there is a tendency for middle to upper income groups to spend less locally than lower income groups.

A factor which may influence these findings is the high proportion of households with more than one wage-earner (see Table 4.5). This creates difficulties if only income is used as a predictive tool for socio-economic status. Families earning incomes which are above that of their social class cannot always be expected to spend their money on the same items or in the same places as that class to which their income is equal.

B. Occupation

It was hypothesised that a negative relationship exists between the occupational status of commuter households and the proportion of expenditures made locally. Given that all things are equal, families within higher occupational strata would purchase less in their home community than those in lower occupational strata, probably because wants and desires differ greatly.

Table 4.30 shows the dependent variable, the proportion of total expenditures made by commuter families in the home community, cross-tabulated against the occupational status of the household. It is evident from the table, that households in the managerial and professional categories spend considerably less locally than do those

TABLE 4.30

Relationship Between Occupation of the Head of Household and the Proportion of Total Expenditures Made Locally by Commuter Families

Proportion Spent Locally	Occupation 1		2		3		4		5		6		7		8	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<25%	5	15.6	15	14.2	3	5.7	1	20.0	1	4.2	7	9.0	0	0.0	0	0.0
25<50%	11	34.4	49	46.2	21	39.6	3	60.0	14	58.3	21	26.9	0	0.0	1	100.0
50<75%	14	43.8	38	35.8	25	47.2	1	20.0	8	33.3	34	43.6	1	100.0	0	0.0
75<100%	2	6.3	4	3.8	4	7.5	0		1	4.2	16	20.5	0	0.0	0	0.0
Total	32	100.0	106	100.0	53	100.0	5	100.0	24	100.0	78	100.0	1	100.0	1	100.0

Chi Square 33.286 21 Degrees of Freedom $p<.05$

Legend: Occupation: 1 Managers and Proprietors
2 Professional and Technical
3 Clerical workers
4 Sales workers
5 Service and Recreation
6 Craftsmen, Tradesmen
7 Labourers
8 Others

in skilled occupations: 50.1 percent and 39.6 percent of households with heads in managerial and professional occupations respectively spend more than half of their expenditures locally as opposed to 64.1 percent of households where the head is a skilled operative.

The analysis indicates that no significant relationships exist between the proportion of expenditures made by country residents in a nearby small town and the occupational status of the head of household.

C. Education

As one would intuitively expect that well-educated and middle-class consumers carry out more searching, particularly for non-routine purchases, it was hypothesised that a negative relationship exists between the educational level of the household and the proportion of expenditures made locally. That is, households within the higher educational strata would spend less in their area of residence than those within lower educational strata.

The analysis indicates that a significant relationship does emerge between level of education and the proportion of expenditures made by commuter families in their home community. Table 4.31 shows that a greater percentage of households with heads possessing primary education (87.5 percent) spend more than half of their retail expenditures locally as opposed to households with heads having university education (40.0 percent). Table 4.32 displays a similar relationship for service expenditures: 56.3 percent of households with heads having only primary education spend more than half of their expenditures locally compared with 28.4 percent of households with

TABLE 4.31

Relationship Between Education of the Head of Household and the Proportion of Retail Expenditures Made Locally by Commuter Families

	Education											
Proportion Spent Locally	1		2		3		4		5		6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<25%	1	6.25	12	10.4	8	9.2	7	11.7	2	10.0	1	50.0
25<50%	1	6.25	28	24.3	27	31.0	29	48.3	8	40.0	0	0.0
50<75%	8	50.0	41	35.7	32	36.8	19	31.7	8	40.0	1	50.0
75<100%	6	37.5	34	29.6	20	23.0	5	8.3	2	10.0	0	0.0
Total	16	100.0	115	100.0	87	100.0	60	100.0	20	100.0	2	100.0

Chi Square 28.091 15 Degrees of Freedom $p<.03$

Legend: Educational Level:
1: Primary Education
2: Secondary Education
3: Post-secondary Non-university
4: University
5: University and Other Training
6: Part-university

TABLE 4.32

Relationship Between Education of the Head of Household and the Proportion of Service Expenditures Made Locally by Commuter Families

	Educational Level											
Proportion Spent Locally	1		2		3		4		5		6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<25%	2	12.5	26	22.6	23	26.4	18	30.0	8	40.0	2	100.0
25<50%	5	31.3	23	20.0	18	20.7	25	41.7	7	35.0	0	0.0
50<75%	2	12.5	37	32.2	25	28.7	10	16.7	4	20.0	0	0.0
75<100%	7	43.8	29	25.2	21	24.1	7	11.7	1	5.0	0	0.0
Total	16	100.0	115	100.0	87	99.9	60	100.1	20	100.0	2	100.0

Chi Square 33.276 15 Degrees of Freedom p<.005

Legend (see Table 4.31)

TABLE 4.33

Relationship Between Education of the Head of Household and the Proportion of Total Expenditures Made Locally by Commuter Families

	Educational Level											
Proportion Spent Locally	1		2		3		4		5		6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<25%	1	6.25	10	8.7	9	10.3	10	16.7	1	5.0	1	50.0
25<50%	5	31.25	40	34.8	29	33.3	34	56.7	11	55.0	1	50.0
50<75%	7	43.8	50	43.5	40	46.0	16	26.7	8	40.0	0	0.0
75<100%	3	18.8	15	13.0	9	10.3	0	0.0	0	0.0	0	0.0
Total	16	100.1	115	100.0	87	99.9	60	100.1	20	100.0	2	100.0

Chi Square 29.58 15 Degrees of Freedom p<.015

Legend (see Table 4.31)

heads possessing university education. The last table, Table 4.33, indicates the relationship between the educational level of the household and the proportion of all expenditures made locally by commuter families. The data shows that 62.6 percent of families where the head of household possesses primary education, spend more than half of all their expenditures right in their own community compared with only 26.7 percent of households where the head possesses university education.

It appears, therefore, that commuter families within the higher educational strata are dependent upon the local economy to a lesser degree than those within the lower strata.

The analysis reveals that no significant relationship exists between the level of education and the proportion of expenditures made by country residents in a nearby small urban centre.

D. Family Size and Age-Sex Distribution

The presence of young children in the household effectively alters the consumption pattern of the family since mobility which is required to shop outside the home community may be restricted. Therefore, it was hypothesised that as adult-equivalent units increase, based on both family size and age-sex distribution, a decrease in the proportion of expenditures made locally will be observed.

The analysis shows that no significant relationships exist between the number of children in the household and the proportion of expenditures made locally by commuter families in their home community. This suggests that the presence of young children has relatively little effect on the mobility of families.

TABLE 4.34

Relationship Between Number of Children in Household and Proportion of Retail Expenditures Made Locally by Country Residents

Proportion Spent Locally	Number of Children: 1 No.	%	2 No.	%	3 No.	%	4 No.	%	5 No.	%	6 No.	%
<25%	3	33.3	9	23.7	4	19.0	2	28.6	0	0.0	1	100.0
25<50%	5	55.6	14	36.8	8	38.1	1	14.3	0	0.0	0	0.0
50<75%	1	11.1	13	34.2	9	42.9	2	28.6	0	0.0	0	0.0
75<100%	0	0.0	2	5.3	0	0.0	2	28.6	2	100.0	0	0.0
Total	9	100.0	38	100.0	21	100.0	7	100.1	2	100.0	1	100.0

Chi Square 38.266 15 Degrees of Freedom p<.001

TABLE 4.35

Relationship Between Number of Children in Household and Proportion of Service Expenditures Made Locally by Country Residents

Proportion Spent Locally	Number of Children: 1 No.	1 %	2 No.	2 %	3 No.	3 %	4 No.	4 %	5 No.	5 %	6 No.	6 %
<25%	7	70.0	18	41.9	11	50.0	3	33.3	1	33.3	0	0.0
25<50%	0	0.0	17	39.5	3	13.6	1	11.1	1	33.3	1	100.0
50<75%	2	20.0	5	11.6	8	36.4	5	55.6	0	0.0	0	0.0
75<100%	1	10.0	3	7.0	0	0.0	0	0.0	1	33.3	0	0.0
Total	10	100.0	43	100.0	22	100.0	9	100.0	3	100.0	1	100.0

Chi Square 27.847 15 Degrees of Freedom p<.025

TABLE 4.36

Relationship Between Number of Children in Household and Proportion of Total Expenditures Made Locally by by Country Residents

Proportion Spent Locally	Number of Children 1 No.	%	2 No.	%	3 No.	%	4 No.	%	5 No.	%	6 No.	%
<25%	5	45.5	13	30.2	6	27.3	4	44.4	1	33.3	0	0.0
25<50%	5	45.5	21	48.8	10	45.5	1	11.1	0	0.0	1	100.0
50<75%	1	9.1	9	20.9	6	27.3	4	44.4	0	0.0	0	0.0
75<100%	0	0.0	0	0.0	0	0.0	0		2	66.7	0	0.0
Total	11	100.1	43	99.9	22	100.1	9	99.9	3	100.0	1	100.0

Chi Square 67.442 15 Degrees of Freedom p<.001

However, the number of children in families living in country residences is significantly related to the proportion of expenditures made by these families in a nearby small urban centre. The data reveal that as the number of children in the household increases, the proportion of expenditures on retail goods (Table 4.34), services (Table 4.35), and the proportion of all expenditures (Table 4.36) made in a small urban centre will also increase.

Although the foregoing analysis has shown that few significant relationships exist, there is evidence to suggest that certain socio-economic and demographic characteristics of commuter and country residential families are associated with the purchase location decision.

VII. Length of Residence as a Factor Affecting the Location-of-Purchase Decision

When people change the locations of their homes, they change their relative positions within the spatial distribution of the functional nodes offering goods and services. Thus, many people are forced into a situation of carrying out searches for quite basic goods and services. Golledge and Brown (1967: 116-117) indicated that this "search activity" (that is, visiting different stores and shopping centres in succession, followed by a number of repeat visits for further comparison) is eventually replaced by "habitual response" in which particular stores and centres are frequently visited.

Initially, however, a lack of knowledge concerning local retail and service facilities may result in many residents passing up the small nearby centre for the guaranteed selection available in the City of Edmonton, where purchases may be carried out in the course of another

type of trip such as the journey to work. As familiarity with the local retail and service sector improves over time, it is hypothesised that the length of residence in a small town or acreage subdivision is positively related to the stability and amount of local expenditures and hence that over time, the impact of local expenditures on small town development will increase.

The analysis, however, indicates that no significant relationships emerge between length of residence and the proportion of expenditures made locally by either commuter or country residential families. This suggests that residents do not take very long to rebuild their shopping patterns. Bell (1970: 7), in fact, indicated that the process of adjustment is rapid, varying from one week for the selection of a supermarket to nine weeks for choosing a dentist. Data provided by question 26 in the household questionnaire (see Appendix I) lend further support to this finding since a high proportion of commuter and country residential families (65.0 percent and 80.8 percent respectively) indicated that their spatial distribution of retail and service expenditures has not changed since their arrival in the community.

VIII. Influence of Former Residence in Edmonton on the Location-of-Purchase Decision

As mentioned earlier (see Table 4.1), a large number of families living in small urban centres and acreage subdivisions within the metropolitan region are former residents of the City of Edmonton. This suggests that many residents may have simply continued to use outlets familiar from their previous pattern of residence. Therefore, it was hypothesised that families who had previously lived in the City would

TABLE 4.37

Relationship Between Place of Former Residence and Proportion of Service Expenditures Made Locally by Country Residents

	Place of Former Residence											
Proportion Spent Locally	1		2		3		4		5		6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<25%	36	54.5	6	30.0	1	50.0	0	0.0	3	37.5	0	0.0
25<50%	16	24.2	8	40.0	0	0.0	0	0.0	1	12.5	1	100.0
50<75%	12	18.2	4	20.0	1	50.0	0	0.0	4	50.0	0	0.0
75<100%	2	3.0	2	10.0	0	0.0	2	100.0	0	0.0	0	0.0
Total	66	99.9	20	100.0	2	100.0	2	100.0	8	100.0	1	100.0

Chi Square 45.012 15 Degrees of Freedom p<.0001

Legend: Place of Former Residence:
1: Edmonton
2: Edmonton Region
3: Home Community
4: Rest of Alberta
5: Out of Province
6: Out of Canada

TABLE 4.38

Relationship Between Place of Former Residence and Proportion of Total Expenditures Made Locally by Country Residents

Proportion Spent Locally	Place of Former Residence 1		2		3		4		5		6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<25%	28	41.8	3	15.0	1	50.0	0	0.0	1	12.5	0	0.0
25<50%	30	44.8	11	55.0	1	50.0	2	0.0	2	25.0	0	0.0
50<75%	9	13.4	5	25.0	0	0.0	2	100.0	4	50.0	1	100.0
75<100%	0	0.0	1	5.0	0	0.0	0	0.0	1	12.5	0	0.0
Total	67	100.0	20	100.0	2	100.0	2	100.0	8	100.0	1	100.0

Chi Square 29.537 15 Degrees of Freedom p<.015

spend less locally than families from other areas.

While the relationship between the proportion spent locally by commuter families and the place of former residence is not significant at the 0.05 level, there is a tendency for former City residents to spend less locally than those who had moved from other parts. The analysis did reveal that the proportion of expenditures made by country residents in the local small town is significantly related to the place of former residence (Tables 4.37 and 4.38). Former City residents spend a considerably smaller proportion of their expenditures in a small urban centre than do other families.

These results have important implications for the future level of retail and service trade in the small towns. As more and more families move out from the City, there may be an increasing tendency to use Edmonton thereby undermining the commercial sector of the small towns.

IX. Influence of Place of Employment on the Purchase Location Decision

Previous research has established that a relationship does exist between the location of employment and the location of retail and service expenditures. Households employed at locations outside their community of residence tend to spend less in the local economy than do households employed locally, ceteris paribus.

The analysis indicates that a statistically significant relationship exists between the location of employment of both the husband and wife and the proportion of expenditures made locally. Data presented in Tables 4.39 and 4.40 reveal that households employed in the City of Edmonton spend less in their area of residence than do households employed locally. A similar relationship is evident among the country residential

TABLE 4.39

Relationship Between Husband's Location of Employment and the Proportion of Total Expenditures Made Locally by Commuter Families

	Place of Employment							
	1		2		3		4	
Proportion Spent Locally	No.	%	No.	%	No.	%	No.	%
<25%	30	11.4	1	3.4	3	3.3	0	0.0
25<50%	107	40.5	8	27.6	28	30.4	5	55.6
50<75%	102	38.6	18	62.1	41	44.6	4	44.4
75<100%	25	9.5	2	6.9	20	21.7	0	0.0
Total	264	100.0	29	100.0	92	100.0	9	100.0

Chi Square 24.554 9 Degrees of Freedom $p<.005$

Legend (see Table 4.37)

TABLE 4.40

Relationship Between Wife's Location of Employment and the Proportion of Total Expenditures Made Locally by Commuter Families

	Place of Employment							
Proportion Spent Locally	1 No.	%	2 No.	%	3 No.	%	4 No.	%
<25%	7	17.9	0	0.0	6	7.1	1	100.0
25<50%	17	43.6	1	33.3	26	30.6	0	0.0
50<75%	12	30.8	1	33.3	44	51.8	0	0.0
75<100%	3	7.7	1	33.3	9	10.6	0	0.0
Total	39	100.0	3	99.9	85	100.1	1	100.0

Chi Square 17.289 9 Degrees of Freedom $p<.05$

Legend (see Table 4.37)

TABLE 4.41

Relationship Between Husband's Location of Employment and the Proportion of Total Expenditures Made Locally by Country Residents

Proportion Spent Locally	Place of Employment 1 No.	%	2 No.	%	3 No.	%	4 No.	%	5 No.	%	6 No.	%	7 No.	%	8 No.	%
<25%	26	37.1	0	-	3	18.8	1	50.0	0	-	0	-	0	-	0	-
25<50%	31	44.3	2	100.0	8	50.0	1	50.0	0	-	0	-	0	-	2	66.7
50<75%	12	17.1	0	-	5	31.3	0	-	1	100.0	1	50.0	0	-	1	33.3
75<100%	1	1.4	0	-	0	-	0	-	0	-	1	50.0	0	-	0	-
Total	70	99.9	2	100.0	16	100.1	2	100.0	1	100.0	2	100.0	0	-	3	100.0

Chi Square 36.207 18 Degrees of Freedom p<.0075

Legend (see Table 4.37)

TABLE 4.42

Relationship Between Wife's Location of Employment and the Proportion of Total Expenditures Made Locally by Country Residents

Proportion Spent Locally	Place of Employment 1 No.	%	2 No.	%	3 No.	%	4 No.	%	5 No.	%
<25%	13	61.9	1	20.0	0	-	0	-	0	-
25<50%	5	23.8	3	60.0	0	-	0	-	1	50.0
50<75%	3	14.3	1	20.0	1	50.0	1	100.0	1	50.0
75<100%	0	-	0	-	1	50.0	0	-	0	-
Total	21	100.0	5	100.0	2	100.0	1	100.0	2	100.0

Chi Square 26.436 12 Degrees of Freedom $p<.001$

Legend (see Table 4.37)

population. Families employed in nearby small towns spend considerably more in these communities than do families working in the City (see Tables 4.41 and 4.42). These findings suggest that travelling outside the local community-economy for work has the effect of broadening the relevant market area. As consumers become more aware of alternative markets and prices, a decrease in total local purchases will take place.

Policy implications suggested by these findings are discussed in the next chapter.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

I. Introduction

The chapter begins with a presentation of the major findings of the research study. This is followed by a review of the methodological procedures employed in the study with a view to making possible recommendations for changes in these techniques. Finally, the practical and theoretical implications of the thesis are set forth, together with suggestions for further research.

II. Summary of Findings

Alternative proposals for small town development can only be evaluated in terms of their overall effect upon the economy in question. One important sector of a small community-economy is the retail trade and service sector.

The purpose of the present study has been to measure the spread effects emanating from the spontaneous growth centre of Edmonton, via commuter expenditures, to municipalities within its hinterland. These expenditures have been compared with those made by non-commuter families in order that an evaluation could be made of the importance of the residential dormitory function to the retail trade and service sector in these small urban municipalities.

More specific objectives were to examine the relationship between the location of expenditures and: (1) the socio-economic status of the commuter; (2) the length of residence in a small town or rural acreage subdivision; and (3) the place of work.

A summary of the research findings is presented below:

A. Hypothesis 1: By absolute value of expenditures, the largest proportion will be located in the City but that relative to the value of receipts for sales and services, the expenditures made in the small towns will be larger.

Although families externally employed spend less in their area of residence than do families employed locally, the foregoing analysis has demonstrated the high degree to which the needs for goods and services are able to be satisfied in the small urban centres; the City of Edmonton serves to satisfy the complement of goods and services demanded. Commuter families in the Towns of Fort Saskatchewan and Leduc actually spend more right in their own community than they do in the City. It may therefore be suggested that, relative to the value of receipts for sales and services, the expenditures made by commuter families locally are larger than those in the City. Unfortunately, as mentioned earlier, data are not available to examine this contention.

The study, however, reveals that families living on rural acreages are far more dependent upon the City of Edmonton than their urban counterparts: only one third of their expenditures are made in a nearby small urban centre.

On the basis of these findings, therefore, it appears that Hypothesis 1 may be accepted.

B. Hypothesis 2: The local propensity to consume will vary according to the type of good or service demanded.

The foregoing analysis has shown that the local propensity to consume does vary according to the type of good and service demanded. In general, the proportion of expenditures made locally by commuter

families will be higher for those goods and services which are demanded frequently and for which variety is not important. For higher order goods and services, a large proportion and in many instances the majority of expenditures are made in the City where the time, inconvenience and cost of travel are insignificant compared to the importance of variety and quality in the selection of the good or service. In some instances, however, where the small town business has been able to compete favourably with the City, the proportion of expenditures made locally has increased.

Families living in country residences are far more dependent upon the City of Edmonton. They not only spend a larger proportion of their expenditures on higher order goods and services in Edmonton than do their urban counterparts, but a considerable proportion of their expenditures on lower order, convenience goods and services are also made in the City. The study, however, did reveal that the degree of dependence upon the City does appear to vary according to the location of county residences with respect to a small urban centre.

Therefore, on the basis of the above evidence, Hypothesis 2 may be accepted.

C. Hypothesis 3: The extent to which retail and service facilities are used in Edmonton will vary by the socio-economic status of the commuter.

Data analysis suggested that certain socio-economic and demographic characteristics of commuter families are associated with the purchase location decision. Families of high socio-economic status tend to spend less in their community of residence than do families of lower socio- economic status.

Therefore, on the basis of the above evidence, Hypothesis 3 may

be accepted.

D. Hypothesis 4: The length of residence in a small town or rural acreage subdivision is positively related to the stability and amount of local expenditures and hence that over time, the impact of expenditures on small town development will increase.

When people change the location of their homes, they are often force into a situation of carrying out searches for quite basic goods and services. It was postulated, therefore, that as residents became more familiar with their local market, retail and service sector, the proportion of expenditures made locally would increase. The data analysis, however, revealed that the length of residence appears to have little or no effect on the purchase location decision suggesting that residents establish new shopping patterns soon after their arrival in the community. On the basis of these findings, Hypothesis 4 may be rejected.

However, a large number of families living in small towns and rural acreage subdivisions in the metropolitan region are former residents of the City of Edmonton. Thus many residents may have simply continued to use retail and service outlets familiar from their previous pattern of residence. Although the analysis revealed that there was no significant relationship between the place of former residence and the proportion of expenditures made locally by commuter families, those who had previously lived in the City tend to spend less in their community of residence than do other families. The study did indicate that the proportion of expenditures made in a nearby small urban centre by country residents was significantly related to their place of former residence in that residents who had previously lived in the City spend less in these

communities than do families from other areas.

E. Hypothesis 5: A statistically significant relationship exists between the location of employment and the location of expenditures. Households externally employed will spend less in their community of residence than those who are employed locally.

Research evidence has been presented which indicates that a statistically significant relationship exists between the location of employment and the location of expenditures. Those households employed in the City of Edmonton tend to spend less in their community of residence than do households employed locally, ceteris paribus. Two possible explanations have been given for this behaviour. First, locally employed community residents may feel some sort of civic responsibility to the economy responsible for their livelihood. Second, travelling outside the local community-economy for work has the effect of broadening the relevant market area. As residents become more aware of alternative markets and prices, a decrease in local purchases is likely to take place.

A similar relationship was evident among the country residential population. Families employed in a nearby small urban centre tend to spend more in these communities than do families working in the City.

Thus on the basis of the above evidence, Hypothesis 5 may be accepted. These findings suggest that policies which encourage residents from small towns and rural acreage subdivisions to seek employment in the City and yet continue to maintain a small town or rural residence may lead to an overall reduction in expenditures made locally. To the degree that these expenditures are subject to the multiplier effect, local economic expansion may be reduced.

III. Methodological Procedures

The purpose of this section is to review the methodological procedures employed in the study with a view to making possible recommendations for changes in these techniques.

A. The Household Questionnaire

During the administering of questionnaire, some problems were encountered which may have affected the validity of responses. A number of respondents experienced difficulty in providing dollar expenditures for various goods and services. This difficulty in response was inversely related to the frequency of both the purchase of the shopping good and the use of the service facility. Such items as groceries, drugstore merchandise, gasoline were reported without problems, while clothing, home furnishings and appliances, and many of the personal services presented more of a challenge. Some problems were also created by the fact that a large proportion of respondents, 80.8 percent to be exact, were housewives. Generally, the husband assumed sole responsibility for managing the financial affairs of the household. As a result, some housewives were unable to report dollar figures regarding such items as mortgage payments, loans, property tax and utility payments. Also, a few housewives did not feel competent responding to either items purchased or services used by their husbands such as hardware, lumber and auto repair. Wherever possible, respondents were re-contacted either personally or by telephone.

It was believed that many of these problems could possibly have been eliminated by leaving the questionnaire overnight with the respondent and collecting it the next day since this would have allowed consultation

between household members. Examination of the questionnaires which were distributed in this manner, however, revealed that respondents were more inclined to omit some questions and answer others for expediency's sake only. Therefore, it was necessary to re-interview respondents in order to obtain a satisfactorily completed questionnaire.

Another factor which may have affected the validity of responses relates to the length of the interview. When conducting personal interviewing the researcher must be aware that the respondent has to give up a portion of time in order to respond to the questions. Since the respondent does not possess an attention span long enough to deal with a lengthy questionnaire, it may well be that the validity of responses will decrease with the length of the interview as the respondent begins to lose interest and answers for expediency's sake only. The household questionnaire employed in this study was by necessity lengthy covering a diverse range of topics. This was necessitated by the need to obtain detailed information on the pattern of commuter expenditures and the various factors influencing these patterns. Data analysis, however, revealed that a number of the questions produced no significant results whatsoever. These questions were therefore the major contributors to making the questionnaire as lengthy as it was.

In summing up, it was thought that the pre-test would have uncovered many of these problems. Therefore, it is recommended that the sample size in a pre-test be significantly larger than the twenty-four respondents interviewed for this study. A second, and perhaps more realistic, option for improving the validity of responses may be to acquaint residents with the study and its purpose prior to data collection. This could be done through the local newspaper. Selected households

could then be contacted in advance and told exactly what information would be required. Thus respondents would encounter less difficulty in replying to the questions during the subsequent interview thereby strengthening the inferences which could be drawn from the data.

B. The Expenditure Diary

One of the major difficulties in behavioural research is to obtain an accurate record of behaviour. In this study, diaries were distributed to willing respondents who were asked to keep a record of their expenditures over a four week period in the summer and again in the winter.

The response rate ot the expenditure diaries was disappointing in view of the rapport established during the interview for the household questionnaire. Many people, once they became familiar with the aims and objectives of the study talked at length about their shopping habits. This clearly demonstrated that respondents were genuinely concerned with where their money is spent since although many respondents did not keep records, they were nonetheless aware that somehow their actual expenditures usually outstripped their expectations if not their incomes. The poor response rate to the diaries must therefore be attributed to some deficiency (or deficiencies) in the data collection procedure.

It is clearly evident from this study that the success of a consumer expenditure diary survey depends upon the motivation of the respondents. Despite genuine interest in the study, every respondent did, to some degree, get tired of recording their expenditures in the diary. In many instances, respondents simply gave up the task altogether. Those who did manage to complete the diary had a tendency to overlook relatively small

expenditures particularly those incurred in the use of service facilities. In aggregate, these relatively "minor" items may have had a significant influence on the overall spatial distribution of expenditures.. It is believed that the recording of expenditures is an inherent problem in the technique, regardless of whether the diary is redesigned or the time period shortened. Therefore, in view of the considerable time and money involved in undertaking a diary survey, it is recommended that the use of this methodological procedure in future research should be seriously reconsidered particularly as it was possible to collect detailed information on commuter expenditures using the household questionnaire.

C. The Business Survey

Information on commercial establishments in the selected urban centres was derived from two main sources. Data pertaining to the square footage of individual establishments were obtained through the business tax assessment cards available at the administrative offices in each municipality. These listings provided detailed data for each establishment currently in business.

Problems, however, were encountered in the derivation of data relating to the annual sales turnover of individual establishments since managers and owners were reluctant to provide such information in an interview. As a result, reliance was placed upon the current Dun and Bradstreet business directory. Despite being the most complete published source of information, the Dun and Bradstreet lists account for only 40 percent of the total number of commercial establishments in the four urban centres. Only data pertaining to these establishments could

therefore be used in the study.

D. Summary and Conclusion

By way of summary and conclusion, the methodology employed in this study has served two purposes: (1) to gather data on the spatial distribution of expenditures, and (2) to gather data on the retail trade and service establishments in the selected urban centres. While there were a number of strong points in the methodology employed here, as witnessed in the amount of extremely useful data gathered for this study, some problems were still encountered. These have been outlined in the foregoing discussion, together with suggestions regarding possible refinements in the data collection procedure. As was mentioned earlier (in Chapter Three), all one can hope to accomplish is to maximise the strengths of the techniques, while attempting to minimise their weaknesses. It is hoped that this has been accomplished here.

The practical and theoretical implications arising out of the findings reviewed earlier are now discussed.

IV. Practical Implications

The final step in the analysis will be to consider that proportion of expenditures made locally in order to derive estimates of the impact of such expenditures upon the retail sector in each of the urban centres.[1] It must be pointed out, however, that these estimates are susceptible to error from changes in commercial marketing practices, expenditure patterns, or outside influences such as the general state of the economy. With these cautions in mind, forecasts are presented under conditions of three

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[1] Limitations in the available data (in terms of reliability) prohibits an analysis of the service sector.

alternative growth scenarios:[2]

Scenario 1: Residential expansion comprising an additional 1,000 households where the proportion of commuter to non-commuter households remains at the present level.

Scenario 2: Residential expansion comprising an additional 1,000 households where the proportion of commuter to non-commuter households increases from its present level.

Scenario 3: Residential expansion comprising an additional 1,000 households where the proportion of commuter to non-commuter households decreases from its present level.

Throughout the proceeding analysis, the commercial ratios used to indicate the level of retail sales per employee, per outlet, and per square foot have been calculated using data available from the Alberta Bureau of Statistics' Retail and Service Trade Statistics, 1975. These data indicate the total number of outlets, employees and receipts from sales for retail establishments in each of the urban centres. Wherever possible, these estimates have been supplemented by ratios derived from data gathered by the business survey.

The results of the analysis are presented below for each municipality based on the following measures (see Table 5.1).

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[2]It is assumed that the ratio of commuter to non-commuter households is the same as the proportion of commuters to non-commuters in the employed residential population in each community. These latter figures have been derived from the 1977 municipal surveys. The only exception is the Town of Stony Plain where the figures have been derived from the 1971 Census of Canada.

TABLE 5.1

Measures Used in the Calculation of Commercial Forecasts

Measure	Fort Saskatchewan	Leduc	St. Albert	Stony Plain
Commuters: non-commuters	40 : 60[1]	60 : 40[1]	80 : 20[1]	35 : 65[1]
Average annual retail expenditures made locally by commuter households.[3]	$3,388.92	4,024.32	2,865.72	3,189.12
Average annual retail expenditures made locally by non-commuter households.[3]	3,272.16	3,845.76	3,404.16	2,978.40
Retail sales per employee[4]	50,000.00	66,000.00	68,000.00	70,000.00
Retail sales per outlet[4]	300,000.00	400,000.00	400,000.00	400,000.00

Source: (1) 1975 Municipal Surveys.

(2) Census of Canada, 1971.

(3) Household Questionnaire, 1977.

(4) Retail and Service Trade Statistics. Alberta Bureau of Statistics, 1975.

A. Fort Saskatchewan

Data analysis indicated that the average commuter household spends $3,388.92 annually on retail items from local merchants compared with $3,272.16 annually by the average household employed locally. Based upon these expenditure figures, the following forecasts have been made for the three alternative scenarios:

Scenario 1: The present ratio of commuter to non-commuter households (40% : 60%) is maintained. That is, 400 commuter households and 600 non-commuter households enter the community.

Total Retail Sales = ($3,388.92 X 400) + ($3,272.16 X 600)

= $3,318,864 per annum.

Scenario 2: The ratio of commuter to non-commuter households increases. For example, 600 commuter households and 400 non-commuter households enter the community.

Total Retail Sales = ($3,388.92 X 600) + ($3,272.16 X 400)

= $3,342,216 per annum.

Scenario 3: The ratio of commuter to non-commuter households decreases. For example, 200 commuter households and 800 non-commuter households enter the community.

Total Retail Sales = ($3,388.92 X 200) + ($3,272.16 X 800)

= $3,295,512 per annum.

Forecasts of the level of retail sales for each of the above scenarios can now be translated into the number of retail employees required. This has been accomplished using the following ratio: 1 employee is equivalent to $50,000 retail sales. Therefore,

Scenario 1 would create 66 additional retail jobs

Scenario 2 would create 67 additional retail jobs

Scenario 3 would create 66 additional retail jobs

A further calculation using a ratio of 1 retail outlet per $300,000 retail sales reveals that all three scenarios would result in 11 new retail establishments.

NOTE: Unfortunately, as the business survey only managed to gather data for a small number of retail establishments, it was impossible to check the reliability of these ratios.

B. Leduc

Data analysis indicated that the average commuter household spends $4,024.32 annually on retail items from local merchants compared with $3,845.76 annually by the average household employed locally. Based upon these expenditure figures, the following forecasts have been made for the three alternative scenarios:

Scenario 1: The present ratio of commuter to non-commuter households in (60% : 40%) maintained. That is, 600 commuter households and 400 non-commuter households enter the community.

Total Retail Sales = ($4,024.32 X 600) + ($3,845.76 X 400)
= $3,952,896 per annum.

Scenario 2: The ratio of commuter to non-commuter households increases. For example, 800 commuter households and 200 non-commuter households enter the community.

Total Retail Sales = ($4,024.32 X 800) + ($3,845.76 X 200)
= $3,988,608 per annum.

Scenario 3: The ratio of commuter to non-commuter households decreases. For example, 400 commuter households and 600 non-commuter households enter the community.

Total Retail Sales = ($4,024.32 X 400) + ($3,845.76 X 600)
= $3,917,184 per annum.

Forecasts of the level of retail sales for each of the above scenarios can now be translated into the number of retail employees required. This has been accomplished using the following ratio: 1 employee is equivalent to $66,000 retail sales. Therefore,

Scenario 1 would create 60 additional retail jobs

Scenario 2 would create 60 additional retail jobs

Scenario 3 would create 59 additional retail jobs.

A further calculation using a ratio of 1 retail outlet per $400,000 retail sales reveals that all three scenarios would result in 11 new retail establishments.

NOTE: The commercial ratios have been substantiated by estimates calculated using data collected by the business survey.

C. St. Albert

Data analysis indicated that the average commuter household spends $2,865.72 annually on retail items from local merchants compared with $3,404.16 annually by the average household employed locally. Based upon these expenditure figures, the following forecasts have been made for the three alternative scenarios:

Scenario 1: The present ratio of commuter to non-commuter households (80% : 20%) is maintained. That is, 800 commuter households and 200 non-commuter households enter the community.

Total Retail Sales = ($2,865.72 X 800) + ($3,404.16 X 200)
= $2,973,408 per annum.

Scenario 2: The ratio of commuter to non-commuter households increases. For example, 900 commuter households and 100 non-commuter households enter the community.

Total Retail Sales = ($2,865.72 X 900) + ($3,404.16 X 100)
= $2,919,564 per annum.

Scenario 3: The ratio of commuter to non-commuter households decreases. For example, 600 commuter households and

400 non-commuter households enter the community.

Total Retail Sales = ($2,865.72 X 600) + ($3,404.16 X 400)

= $3,081,096 per annum.

Forecasts of the level of retail sales for each of the above scenarios can now be translated into the number of retail employees required using the following ratio: 1 employee is equivalent to $68,000 retail sales. Therefore,

Scenario 1 would create 44 additional retail jobs

Scenario 2 would create 43 additional retail jobs

Scenario 3 would create 45 additional retail jobs.

A further calculation using a ratio of 1 retail outlet per $400,000 retail sales reveal that:

Scenario 1 would result in 7 new retail establishments

Scenario 2 would result in 7 new retail establishments

Scenario 3 would result in 8 new retail establishments.

NOTE: These commercial ratios have been substantiated by estimates calculated using data collected by the business survey.

D. Stony Plain

Data analysis indicated the average commuter household spends $3,189.12 annually on retail items from local merchants compared with $2,978.40 annually by the average household employed locally. Based upon expenditure figures, the following forecasts have been made for the three alternative scenarios:

Scenario 1: The present ratio of commuter to non-commuter households (35% : 65%) is maintained. That is, 350 commuter households and 650 non-commuter households enter the community.

Total Retail Sales = ($3,189.12 X 350) + ($2,978.40 X 650)

= $3,052,152 per annum.

Scenario 2: The ratio of commuter to non-commuter households increases. For example, 500 commuter households and 500 non-commuter households enter the community.

Total Retail Sales = ($3,189.12 X 500) + ($2,978.40 X 500)

= $3,083,760 per annum.

Scenario 3: The ratio of commuter to non-commuter households decreases. For example, 250 commuter households and 750 non-commuter households enter the community.

Total Retail Sales = ($3,189.12 X 250) + ($2,978.40 X 750)

= $3,031,080 per annum.

Forecasts of the level of retail sales for each of the above scenarios can now be translated into the number of retail employees required using the following ratio: 1 employee is equivalent to $70,000 retail sales. Therefore,

Scenario 1 would create 44 additional retail jobs

Scenario 2 would create 44 additional retail jobs

Scenario 3 would create 43 additional retail jobs

A further calculation using the ratio of 1 retail outlet per $400,000 retail sales reveals that all three scenarios would result in 8 new retail establishments.

NOTE: The commercial ratios have been substantiated by estimates calculated using data collected by the business survey.

Two distinct features arise from the foregoing analysis. First, it is evident that each scenario has produced almost identical commercial forecasts. This is due to the fact that the total annual retail purchase

made by locally employed households and those employed outside the community of residence are similar. Second, forecasts of the level of retail sales, and the number of additional retail employees and establishments are considerably higher for Fort Saskatchewan and Leduc than those for St. Albert and Stony Plain. These forecasts, therefore, may be a reflection of the size of the respective trading area populations. Although the Town of Stony Plain has been an important retail centre in the past, the relatively small forecasts may be attributable to the invasion of the Town's traditional trading area by commercial establishments located in Spruce Grove.

Up to this point, the study has only considered the impact of commuter expenditures upon the local retail sector. However, in order to evaluate the impact of residential dormitory development upon the local economy as a whole, all municipal costs and revenues attributed to this type of development must be determined. Although the allocation of these costs and revenues will involve many decisions of a subjective nature, the resulting net cost/revenue estimate will provide a general indication of the net fiscal impact of this type of development. This estimate can then be compared with those obtained for alternative types of development (such as commercial and industrial growth) in order to determine which type of development is the most financially beneficial form of development to the community.

An analysis of the net municipal costs attributable to alternative types of development (that is, residential, commercial and industrial) has been undertaken by the City of St. Albert (1976d). Based primarily upon 1975 operating expenditures, it was found that commercial development was the most financially beneficial form of development to St. Albert creating approximately seven times as much surplus revenue per net acre

as the other major types of development (City of St. Albert, 1976d: 93). Commercial development generated more revenue than industrial development because the average net acre of commercial development generated between three and four times more property and business tax revenue than the current average net acre of industrial development. This difference, however, was expected to narrow significantly in the future as industrial development is given a higher assessment. The large amount of surplus revenue per net acre from commercial development in comparison to residential development is not primarily caused by different amounts of tax revenues per acre but rather by the costs of providing municipal services to residential development being three times higher per net acre of providing services to commercial development.

The unique set of circumstances evident in each municipality (in terms of differing tax assessment procedures) means that these findings are only applicable to St. Albert. Therefore, similar analyses must be undertaken in the other municipalities in order to evaluate alternative proposals for local economic development.

V. Theoretical Implications

The review of the literature relating to the impact of growth centres upon the regions in which they are set has illustrated the dearth of empirical study and paucity of information about the spread effects of growth. These problems have been further compounded by the contradictory findings of various impact studies. Limited evidence that is available suggests that the spread effects of growth from a growth centre derive largely from impact via the labour market, that is, the degree of metropolitan labour market participation is a key variable indexing the

magnitude of growth centre impact.

The purpose of the present study has been to examine the extent to which commuters may transfer earned income to satellite communities thus generating further activity in the retail trade and service sector, particularly by their expenditures. This aspect of commuting is an area where there has been only slight empirical testing of theories concerning the spread effects from growth centres. And there have certainly been no estimates of the extent of generated economic benefits in specific peripheral communities using micro-data.

The approach to this study differed markedly from the more traditional approaches used to determine whether or not growth does diffuse outward into the surrounding region. As indicated by Moseley (1974: 122), there have been basically two approaches to the study of growth centre impact: on the one hand, studies of process which have focused upon the various "flows" or "channels" emanating from the centre and, on the other hand, studies of form which have attempted to relate the "surface" of development to growth-centre proximity. Both approaches have predominantly been concerned with the spatial aspects of such impact rather than the actual mechanism of spread. Since the present study is concerned as much with process as with form, attention has been given to the purchasing behaviour of commuter families in an attempt to evaluate the impact of their local consumption expenditures on the local economy. In order to determine the local propensity to consume, however, it was necessary to obtain a clear understanding of the reasons why households purchase where they do. The concern was not so much with the items being purchased or even with when the purchase was made; rather it was with those variables which influence the process a household goes through when deciding whether

a particular purchase will be made in the community of residence of elsewhere.

As mentioned earlier (in Chapter One), past research has been almost entirely based upon broad aggregate data which occasionally has been supplemented by some empirical survey data. This may in fact explain some of the inconsistencies in the findings of such studies. Furthermore, there has been a tendency to overestimate the spread effects of growth because the available data have been unable to take account of the various leakages. A household questionnaire was therefore designed for this study in order to obtain detailed measurement of the spread effects emanating from the spontaneous growth centre of Edmonton, via the expenditure patterns of commuter families, to small urban centres in its hinterland. Data on the spatial distribution of expenditures permitted a straightforward quantification of the net effect of backwash and spread. Since the questionnaire also gathered detailed information on the reasons for the location of purchase, it was possible to derive a clear understanding of the actual "mechanics" of the processes giving rise to the spatial patterns revealed by the dollar expenditures.

Therefore, wherever possible, it is recommended that this type of approach should be applied to other kinds of spread mechanism so that eventually a theory or conceptual model of growth transmission (or not) in the hinterland can be developed. Thus, it would be possible to ascertain what developmental measures are necessary in both the growth centre and communities in its periphery.

VI. Suggestions for Future Research

The conclusions obtained from the foregoing investigation point to a number of areas in which further study appears relevant:

- The results of this study only apply to four small urban centres in Edmonton metropolitan region. Therefore, similar research should be conducted in other metropolitan areas throughout North America in order to ascertain whether the results of the present study are indicative of the spread effects emanating from a growth centre, via the expenditure patterns of commuter families, to its hinterland region.
- The total direct, indirect and induced effects of commuter expenditures within small towns must be identified, together with the establishment of a critical threshold or range of commuting level beyond which the favourable impacts of commuting are evident.
- The socio-economic and demographic characteristics affecting the location of purchase decision have been treated separately in this analysis. Further research is needed to determine the relative importance of each variable.
- Although some refinements in data collection procedure are still needed in order to improve the validity of responses, the study has demonstrated that an emphasis on detailed measurement is necessary in order to account for the processes by which the impact of growth centres takes place. The reader is asked to refer to an earlier section of this chapter where recommendations for changes in the methodology employed in this study have been set forth.
- As Moseley has stated: "Any examination of the impact of growth centres upon the regions in which they are set must be based on an exposition of the processes by which such impact may take place and of the spatial patterns or forms which theory suggests might be produced" (Moseley, 1973a: 58). The review of the literature,

however, indicated that previous research has tended to focus upon the spatial aspects of this impact. In the present study, therefore, emphasis has been placed upon the behaviour of individual "actors"-in this case, the commuter families. This appears to be a valuable area for research since it does offer a much better understanding of the actual mechanism of spread. The approach should therefore be applied to each polarisation (backwash) and trickledown (spread) mechanism so that a theory or conceptual model of growth transmission (or not) can be developed.

- The research has only considered the importance of commuting to the local retail trade and service sector. However, in order to determine the net financial impact of residential dormitory development upon the local economy as a whole, the various municipal costs and revenues attributed to this type of development must be determined in order to provide a net cost/revenue estimate. In this way, the impact of residential dormitory development can be evaluated relative to alternative proposals for local economic development.

The results of this additional research should provide policy makers with a better idea regarding what measures are necessary in both the centre and periphery if the beneficial impact of the growth centre is to be fostered as a planning objective.

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APPENDIX I

THE HOUSEHOLD QUESTIONNAIRE

DEPARTMENT OF GEOGRAPHY
TELEPHONE (403) 432-3274

THE UNIVERSITY OF ALBERTA
EDMONTON, CANADA T6G 2H4

HOUSEHOLD QUESTIONNAIRE

Dear Sir or Madam:

With the support of the Alberta Government's Department of Business, Development and Tourism, Dr. Ironside and I are conducting a survey to determine the pattern of expenditures made by commuters and their families in the Edmonton region. This information will be used for the preparation of my Master's thesis in Geography at the University of Alberta and a research report.

The investigation will shed light on the benefits accruing from commuting for small towns, rural counties and the city. Such a study is urgently required as a number of towns in the Edmonton region are currently contemplating the adoption of a policy of "balanced development", that is, industrial and commercial as well as residential growth, in order to provide adequate tax revenues to pay for new services demanded as a result of residential development in particular. This policy, however, places the municipality in direct competition with the City of Edmonton and other municipalities as well as raising its debt for an increasing volume and variety of services. Therefore, an understanding of the contribution of the dormitory function will help the region's communities better manage the course of their future growth, thereby making them better places for all to live.

Needless to say, in order to complete this study, we would appreciate your help. The questions we will ask you concern the expenditure of your personal income generated by employment in Edmonton. Although these questions may appear intrusive, we should like to point out that we are not interested in your expenditures as an individual but as one out of a sample of 500 householders. Therefore, the information we hope you will give us will be aggregated together with the data from the other householders. Accordingly, all individual responses which we receive will be completely confidential. We do not wish to have your name.

May I thank you in advance for your cooperation in assisting us in this research.

Yours sincerely,

Allan G. Williams

Allan G. Williams

R. G. Ironside

R.G. Ironside
Professor

RGI/jc

HOUSEHOLD QUESTIONNAIRE

I. RESIDENCE

1. Respondent's address _____
2. How long have you lived here? _____ (years)
3. Where did you live immediately before this home? _____

_____

4. How long did you live there? _____ (years)
5. What were the reasons for moving to your present home? _____

_____

_____

II. ACTIVITY PATTERNS

Work:

6. Of members of your household who work outside the home, can you tell me where exactly they work? And how long have they been working at their current jobs?

Household Member	Location	Years
Husband		
Wife		
Daughter(s)		
Son(s)		
Other(s)		

7. What daily working hours do they have?

Household Member	Hours
Husband	
Wife	
Daughter(s)	
Son(s)	
Other(s)	

8. What mode of transport do they use to get to their places of employment?

Household Member	Own Car	Car Pool with Family	Car Pool with Neighbours	Bus	Motorcycle	Other (Please specify)
Husband	☐	☐	☐	☐	☐	☐
Wife	☐	☐	☐	☐	☐	☐
Daughter(s)	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐
Son(s)	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐
Other(s)	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐

INSTRUCTION FOR QUESTION 9: ENSURE RESPONDENT IS AS SPECIFIC AS POSSIBLE ABOUT THE NATURE OF THE WORK AND RESPONSIBILITIES.

9. What is their occupation?

Household Member	Occupation
Husband	_____
Wife	_____
Daughter(s)	_____
	_____
Son(s)	_____
	_____
Other(s)	_____
	_____

3

Shopping:

INSTRUCTION: GIVE RESPONDENT CARD NO. 1, TURN TO TABLE AND ASK QUESTION USING EACH ITEM GROUP

10. Where do you shop for the following goods? How much approximately per month (in $) do you spend on each of these goods at each location indicated? And how often per month do you shop there?

Product	Location	Estimated $ Per Month	Frequency
Groceries			per month
Drugstore items			per month
Clothing:			
(a) everyday			per year
(b) formal			per year
Hardware			per year
Electrical appliances			
(a) major			per year
(b) minor			per year
Furniture			per year
Pet shop merchandise			per month
Camping equipment/ sporting goods			per year
Jewellery/furs			per year
Automobiles			per year
Liquor			per month
Lumber			per year
Shoes			per year

INSTRUCTION: GIVE RESPONDENT ANSWER CARD NO. 2

11. Why do you shop for these goods where you indicated? Selected ONE or MORE of the following reasons and rank in preference (1,2,3, etc.)

Product \ Reason	a Greater variety of styles and sizes	b Greater variety and range of prices and quality	c Price level	d Location relative to home	e Location relative to workplace	f En route from work to home or vice versa	g Quality of service	h Reputation of retailer	i Keep more convenient hours	j More bargain sales	k Convenience of multiple-and combined-purpose trips	l Others (please specify)
Groceries												
Drugstore items												
Clothing (a) everyday (b) formal												
Hardware												
Electrical appliances: (a) major (b) minor												
Furniture												
Pet shop merchandise												
Camping equipment/ sporting goods												
Jewellery/furs												
Automobiles												
Liquor												
Lumber												
Shoes												

12. When you first arrived here, did you go to these same places for the above goods?

Yes ☐ No ☐

If no, please elaborate: _____

_____

_____

INSTRUCTION: GIVE RESPONDENT ANSWER CARD NO. 3

13. On a shopping trip, which of the following do you normally do? (Please check with "x" for grocery shopping and "√" for durable goods shopping.)

a) Shop weekdays (8:00 am - 5:00 pm) ☐

b) Shop evenings (after 5:00 pm) ☐

c) Shop weekends (Saturdays and Sundays) ☐

d) only visit one major/minor shopping centre ☐

e) sometimes visit more than one major/minor shopping centre ☐

f) often visit more than one major/minor shopping centre ☐

g) always visit more than one major/minor shopping centre ☐

14. Do you eat out during your lunch breaks at work?

Yes ☐ No ☐

If yes, how much do you spend approximately per week? $ _____

15. Are you likely to go shopping for just one or two items OR do you generally wait until you need several different items before going shopping?

(a) Shop for one or two items ☐

(b) Wait until need for several different items ☐

If (b), does this affect the location of your shopping expenditures?

Yes ☐ No ☐

If yes, how? _____

_____

INSTRUCTION: IF THE ANSWER TO #16 (a) is NO, CONTINUE ON #17

16. (a) Do you use any mail order services for the purchase of shopping goods (e.g. Woodward's, Sears, the Bay, etc.)?

Yes ☐ No ☐

(b) If yes, approximately how much (in $) have your total purchases been in the last six months? $_____

(c) What types of goods were purchased? (Interviewer should ensure that categories are comparable with those given on Card No. 1).

_____

_____

(d) And at what stores did you use these mail order services?

_____

_____

1 6

INSTRUCTION: IF THE ANSWER TO #17 (a) IS NO, CONTINUE ON #18.

17. (a) Do you purchase any shopping goods by telephone?

Yes ☐ No ☐

(b) If yes, approximately how much (in $) have you spent in the last six months? (Interviewer should ask the respondent for last month's purchases if difficulty is encountered in remembering purchases for six months.) $_____

(c) What types of goods were purchased? (Interviewer should ensure that categories are comparable with those given on Card No. 1.)

_____

_____

(d) And at what stores were these purchases made?

_____

_____

(e) Did you make any of these purchases by catalogue?

Yes ☐ No ☐

(f) If yes, what types of goods were purchase by catalogue? (Interviewer should ensure that categories are comparable with those given on Card No. 1.)

_____

_____

(g) Where were these purchases made? _____

_____

_____

(h) Were any other goods (not already mentioned) purchased by catalogue?

Yes ☐ No ☐

(i) If yes, could you please indicate what these were?

_____

_____

INSTRUCTION: GIVE RESPONDENT ANSWER CARD NO. 4.

18. What are the reasons for shopping in your home community? (Rank preferences):

Convenience	☐	Availability of goods	☐
Community or shop loyalty	☐	Others (please specify)	☐
Credit availability	☐		
Price level	☐		
Quality of goods	☐		

INSTRUCTION: GIVE RESPONDENT ANSWER CARD NO. 5.

19. What are the reasons for shopping in Edmonton? (Rank preferences):

Range of goods	☐	Proximity to workplace	☐
Quality of goods	☐	Quality of service	☐
Price Level	☐	Reputation of retailer	☐
Availability of goods	☐	Others (please specify):	☐

Service Facilities:

INSTRUCTION: GIVE RESPONDENT CARD NO. 6. TURN TO TABLE AND ASK QUESTION USING EACH SERVICE FACILITY.

20. Where do you go for the following services? How much approximately per month (in $) do you spend on each service facility at each location indicated? And how often per month do you use these facilities?

Facility	Location	Estimated $ Per Month	Frequency
Medical:			
Doctor (G.P.)			per month
Dentist			per month
Optometrist			per month
Pediatrician			Per month
Specialist			per month
Hospital			per month
Clinic			per month
Pharmacy			per month
Veterinarian			per month
Others (please specify)			per month
Recreation:			
Curling			per month
Ice rinks			per month
Bowling alleys			per month
Pool halls			per month
Swimming pool			per month
Bingo			per month
Community centre			per month
Others (please specify)			per month
Personal Services:			
Laundry/dry cleaner			per month
Hairdresser/barber			per month
Car/truck repair			per month
Vehicle rental			per month
Post office			per month
Plumber			Per month
Electrician			per month
Gasoline station			per month
Professional Services:			
Bank			per month
Insurance			per month
Lawyer			per month
Accountant			per month
Clubs:			
Social			per month
Service			per month
Political			per month
Sports			per month
Charity			per month
Entertainment:			
Taverns, bars, lounges			per month
Movies			per month
Restaurants, snack bars			per month
Dances, discos, shows, concerts			per month
Spectator sports			per month
Place of Worship:			per month

8

INSTRUCTION: GIVE RESPONDENT ANSWER CARD NO. 7.

21. Why do you use the facilities where you indicated? Select ONE or MORE of the following reasons and rank in preference (1,2,3, etc.).

	Variety of Facilities	Quality of Facilities	Price level	Proximity to home	Proximity to workplace	Availability	Community or service loyalty	Others (please specify
Medical:								
Doctor (G.P.)								
Dentist								
Optometrist								
Pediatrician								
Specialist								
Hospital								
Clinic								
Pharmacy								
Veterinarian								
Others (please specify):								
Recreation:								
Curling								
Ice rinks								
Bowling alleys								
Pool halls								
Swimming pool								
Bingo								
Community centre								
Others (please specify):								
Personal Services:								
Laundry/dry cleaner								
Hairdresser/barber								
Car/truck repair								
Vehicle rental								
Post office								
Plumber								
Electrician								
Gasoline station								
Professional Services:								
Bank								
Insurance								
Lawyer								
Accountant								
Clubs:								
Social								
Service								
Political								
Sports								
Charity								
Entertainment:								
Taverns, bars, lounges								
Movies								
Restaurants, snack bars								
Dances, discos, shows, concerts								
Spectator sports								
Place of Worship:								

22. When you first arrived here, did you go to these same places for the above services?

Yes ☐ No ☐

If no, please elaborate: _____

_____

_____

General:

INSTRUCTION: ASK ALTERNATIVES IN A RANDOM SEQUENCE.

23. What do you think of the goods and services offered in your home community in terms of quality, price and variety? (Please check):

a. excellent ☐
b. good ☐
c. average ☐
d. fair ☐
e. poor ☐

24. Have you any suggestions for improvements? _____

_____

_____

_____

25. Would you please tell me how much approximately (in $) of your total monthly expenditure is spent in each location?

Home Community	_____	$_____
Edmonton	_____	$_____
Others (please specify)	_____	$_____
	_____	$_____

26. Is the percentage share of this expenditure among the above localities the same as when you first arrived in this community?

Yes ☐ No ☐

If no, would you please indicate in what way a change has occurred? And why did a change take place? _____

_____

_____

_____

27. Do you think that your current pattern of expenditure will change in the future?

Yes ☐ No ☐

If yes, please elaborate: _____

_____

_____

28. How would you sum up the differences in the retail and service facilities between your community and Edmonton? _____

_____

_____

_____

III. LOCAL AUTHORITY EXPENSES

29. (a) If you own this home, how much property tax did you pay in 1976? $_____

(b) If you rent this home, what is your monthly rental and where is your landlord located?

$ _____ per month _____ (Location of Landlord)

30. Do you think that increased spending in your home community would have beneficial consequences upon the taxes for homeowners?

_____

_____

_____

31. How much did you pay for utilities in 1976 and to which authorities?

		Authority
Telephones	$_____	_____
Gas	$_____	_____
Water and sanitation	$_____	_____
Electricity	$_____	_____

IV. HOUSEHOLD DETAILS

Since people's behaviour varies according to age, household size, income, education and occupation, we would be grateful if you could provide us with some further information concerning you and your household. In this way, we can compare groups of people.

INSTRUCTION: GIVE RESPONDENT ANSWER CARD NO. 8.

32. Age (Please check):

	Husband	Wife
under 25	☐	☐
25 - 34	☐	☐
35 - 44	☐	☐
45 - 54	☐	☐
55 - 64	☐	☐
over 65	☐	☐

33. How many members are in your household? _____

INSTRUCTION: IF THE ANSWER TO #34 IS NO, CONTINUE ON #40.

34. Do you have any children (under 18) living at home?

Yes ☐ No ☐

If yes:

35. How many do you have? _____

36. How old are they? _____; _____; _____; _____; _____.

37. How many attend school? _____

38. Do you pay any non-resident fees for the education of your children?

Yes ☐ No ☐

If yes, could you please indicate how much (per annum) is required and to what authority this is payable.

$_____ Authority: _____

39. Do you pay any private school fees?

Yes ☐ No ☐

If yes, could you please indicate how much (per annum) is required and to which school this is payable.

$_____ School _____

INSTRUCTION: GIVE RESPONDENT ANSWER CARD NO. 9.

40. Would you please indicate the category which best describes your total net annual household income? (Please check):

under $ 5,000	☐	$25,000 - $29,999	☐
$ 5,000 - $ 9,999	☐	$30,000 - $34,999	☐
$10,000 - $14,999	☐	$35,000 - $39,999	☐
$15,000 - $19,999	☐	over $40,000	☐
$20,000 - $24,999	☐		

41. How many persons are contributing to your household's total net annual income? _____

INSTRUCTION: GIVE RESPONDENT ANSWER CARD NO. 10.

42. What level of formal education does the head of household have? (Please check):

Elementary (grades less than 9) ☐

Secondary (grades 9 - 13) ☐

Post-secondary non-university ☐

University ☐

University and other training ☐

43. How many cars does this household own? _____

44. What mode of transport do you use for shopping? (Please check):

Car	☐	Bicycle	☐
Bus	☐	Others (please specify)	☐
Walk	☐		

12

45. Other comments: _____

_____

_____

_____

_____

_____

FOR INTERVIEWER USE:

Day of Week ☐

Date Month ☐☐

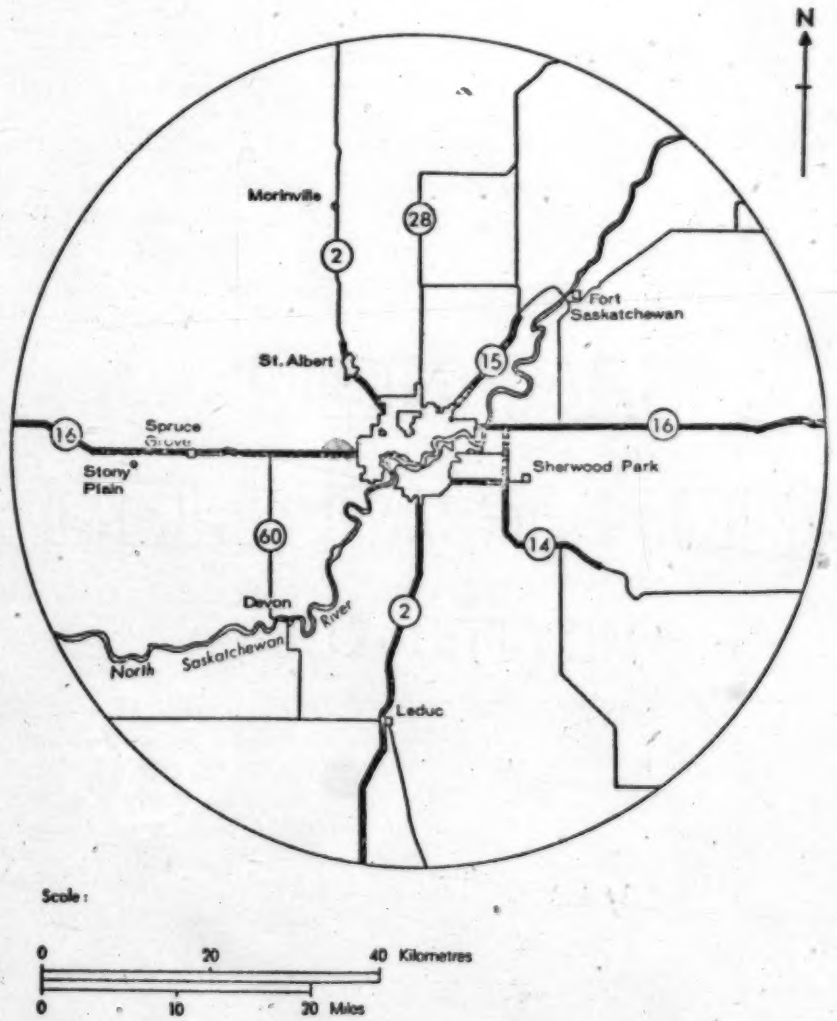
Time of Interview:
- 8:30 - 12:00 ☐
- 12:00 - 2:00 ☐
- 2:00 - 5:30 ☐
- 5:30 onwards ☐

Time required for completion of interview: _____ (minutes)

Number of trips to household for for completion of interview: ☐

Sex of Respondent: Male ☐ Female ☐

FIGURE 1 : STUDY AREA



APPENDIX II

THE EXPENDITURE DIARY

DEPARTMENT OF GEOGRAPHY
TELEPHONE (403) 432-3274

THE UNIVERSITY OF ALBERTA
EDMONTON, CANADA T6G 2H4

EXPENDITURE DIARY

Dear Sir or Madam,

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In order to meet set deadlines for analysis of our survey data we would be grateful if you, at your earliest convenience, would consider returning the questionnaire no later than , 1977.

If you encounter any problems relating to either the questionnaire itself or the purpose, etc. of this survey, please do not hesitate to contact us at phones: 432-5626 or 432-3564.

May I thank you in advance for your cooperation in assisting us in this research.

Yours sincerely,

Allan G. Williams

Allan G. Williams

R. G. Ironside

R.G. Ironside
Professor
University of Alberta

DEPARTMENT OF GEOGRAPHY

UNIVERSITY OF ALBERTA

1. Respondent's address _____

2. Time period during which expenditures are being recorded: _____ - _____

3. Could you please, for the following list of items, check off how much approximately (in $) you spent on each item-group and where you spent it (city, town or village).

NOTE:
- F.S. = Fort Saskatchewan
- L. = Leduc
- S.A. = St. Albert
- S.P. = Stony Plain
- E. = Edmonton
- O. = Other (please specify)

$ Spent

Item - Group	Location of Expenditures	Week One							Week Two						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1. Groceries - (eg. foodstuffs, soft drinks, etc.)	Sherwood Park														
	Edmonton														
	Other														
2. Drugstore items - (eg. first aid supplies; gift cards, gifts and toys; camera supplies, films and bulbs, etc.; prescriptions; cosmetics; all sundry items, etc.)	Sherwood Park														
	Edmonton														
	Other														
3. Clothing: (1) everyday (eg. casual wear, work clothes, etc.)	Sherwood Park														
	Edmonton														
	Other														
(2) formal (eg. suits, evening gowns, coats, etc.)	Sherwood Park														
	Edmonton														
	Other														
4. Hardware - (eg. home and garden equipment, tools, paint, etc.)	Sherwood Park														
	Edmonton														
	Other														
5. Electrical appliances (1) Major - (eg. T.V., stereo, washing machine, freezer, fridge, etc.)	Sherwood Park														
	Edmonton														
	Other														
(2) minor - (eg. toaster, blender, steam iron, etc.)	Sherwood Park														
	Edmonton														
	Other														
6. Furniture	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item-Group	Location of Expenditures	Week One							Week Two						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
7. Pet shop merchandise	Sherwood Park Edmonton Other														
8. Camping Equipment/sporting goods (eg. stoves, fuel, coolers, fishing tackle, guns, etc.)	Sherwood Park Edmonton Other														
9. Jewellery/furs - (eg. watches, rings, stoles, etc.)	Sherwood Park Edmonton Other														
10. Automobiles - (eg. cars, trucks, campers, etc.)	Sherwood Park Edmonton Other														
11. Liquor - (eg. spirits, beers, etc.)	Sherwood Park Edmonton Other														
12. Lumber	Sherwood Park Edmonton Other														
13. Shoes	Sherwood Park Edmonton Other														
14. Miscellaneous (any expenditures not previously included)	Sherwood Park Edmonton Other														

$ Spent

Item-Group	Location of Expenditures	Week Three							Week Four						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1. Groceries - (eg. foodstuffs, soft drinks, etc.)	Sherwood Park Edmonton Other														
2. Drugstore items - (eg. first aid supplies; gift cards; gifts and toys; camera supplies, films and bulbs, etc.; prescriptions; cosmetics; all sundry items, etc.)	Sherwood Park Edmonton Other														
3. Clothing: (1) everyday (eg. casual wear, work clothes, etc.	Sherwood Park Edmonton Other														
(2) formal (eg. suits, evening gowns, coats, etc.	Sherwood Park Edmonton Other														
4. Hardware - (eg. home and garden equipment, tools, paint, etc.)	Sherwood Park Edmonton Other														
5. Electrical Applicances (1) Major - eg. T.V., stereo, washing machine, freezer, fridge, etc.)	Sherwood Park Edmonton Other														
(2) Minor - (eg. toaster, blender, steam iron, etc.)	Sherwood Park Edmonton Other														

$ Spent

Item - Group	Location of Expenditures	Week Three							Week Four						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
6. Furniture	Sherwood Park														
	Edmonton														
	Other														
7. Pet shop merchandise	Sherwood Park														
	Edmonton														
	Other														
8. Camping equipment/sporting goods (eg. stoves, fuel, coolers, fishing tackle, guns, etc.)	Sherwood Park														
	Edmonton														
	Other														
9. Jewellery/furs - (eg. watches, rings, stoles, etc.	Sherwood Park														
	Edmonton														
	Other														
10. Automobiles - (eg. cars, trucks, campers, etc.)	Sherwood Park														
	Edmonton														
	Other														
11. Liquor - (eg. spirits, beers, etc.)	Sherwood Park														
	Edmonton														
	Other														
12. Lumber	Sherwood Park														
	Edmonton														
	Other														
13. Shoes	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week Three							Week Four						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
14. Miscellaneous (any expenditures not previously included)	Sherwood Park														
	Edmonton														
	Other														

4. Could you please for the following list of service facilities, check off how much approximately (in $) you spent on each facility and where you used these facilities (city, town or village).

NOTE: F.S. = Fort Saskatchewan

L. = Leduc

S.A. = St. Albert

S.P. = Stony Plain

E. = Edmonton

O. = Other (please specify)

$ Spent

Item - Group	Location of Expenditures	Week One							Week Two						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1. Medical															
Doctor	Sherwood Park														
	Edmonton														
	Other														
Dentist	Sherwood Park														
	Edmonton														
	Other														
Optometrist	Sherwood Park														
	Edmonton														
	Other														
Pediatrician	Sherwood Park														
	Edmonton														
	Other														
Specialist	Sherwood Park														
	Edmonton														
	Other														
Hospital	Sherwood Park														
	Edmonton														
	Other														
Clinic	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week One							Week Two						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Medical (Continued)															
Pharmacy	Sherwood Park														
	Edmonton														
	Other														
Veterinarian	Sherwood Park														
	Edmonton														
	Other														
Others (please specify)	Sherwood Park														
	Edmonton														
	Other														
2. Recreation															
Curling	Sherwood Park														
	Edmonton														
	Other														
Ice rinks	Sherwood Park														
	Edmonton														
	Other														
Bowling alleys	Sherwood Park														
	Edmonton														
	Other														
Pool halls	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week One							Week Two						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Recreation (Continued)															
Swimming pool	Sherwood Park														
	Edmonton														
	Other														
Bingo	Sherwood Park														
	Edmonton														
	Other														
Community centre	Sherwood Park														
	Edmonton														
	Other														
Others (please specify)	Sherwood Park														
	Edmonton														
	Other														
3. Personal Services															
Laundry/dry cleaner	Sherwood Park														
	Edmonton														
	Other														
Hairdresser/barber	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week One							Week Two						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Personal Services (continued)															
Car/truck repair	Sherwood Park														
	Edmonton														
	Other														
Vehicle rental	Sherwood Park														
	Edmonton														
	Other														
Post office	Sherwood Park														
	Edmonton														
	Other														
Plumber	Sherwood Park														
	Edmonton														
	Other														
Electrician	Sherwood Park														
	Edmonton														
	Other														
Gasoline station	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week One							Week Two						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
4. Professional Services															
Bank	Sherwood Park														
	Edmonton														
	Other														
Insurance	Sherwood Park														
	Edmonton														
	Other														
Lawyer	Sherwood Park														
	Edmonton														
	Other														
Accountant	Sherwood Park														
	Edmonton														
	Other														
5. Clubs															
Social	Sherwood Park														
	Edmonton														
	Other														
Service	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week One							Week Two						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Clubs (continued)															
Political	Sherwood Park														
	Edmonton														
	Other														
Sports	Sherwood Park														
	Edmonton														
	Other														
Charity	Sherwood Park														
	Edmonton														
	Other														
6. Entertainment															
Taverns, bars, lounges	Sherwood Park														
	Edmonton														
	Other														
Movies (cinemas, drive-ins)	Sherwood Park														
	Edmonton														
	Other														
Restaurants, snack bars	Sherwood Park														
	Edmonton														
	Other														
Dances, discos, shows, concerts	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week One							Week Two						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Entertainment (continued) Spectator sports	Sherwood Park														
	Edmonton														
	Other														
7. Place of Worship	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week Three							Week Four						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1. Medical															
Doctor	Sherwood Park														
	Edmonton														
	Other														
Dentist	Sherwood Park														
	Edmonton														
	Other														
Optometrist	Sherwood Park														
	Edmonton														
	Other														
Pediatrician	Sherwood Park														
	Edmonton														
	Other														
Specialist	Sherwood Park														
	Edmonton														
	Other														
Hospital	Sherwood Park														
	Edmonton														
	Other														
Clinic	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week Three							Week Four						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Medical (Continued) Pharmacy	Sherwood Park														
	Edmonton														
	Other														
Veterinarian	Sherwood Park														
	Edmonton														
	Other														
Others (please specify)	Sherwood Park														
	Edmonton														
	Other														
2. Recreation Curling	Sherwood Park														
	Edmonton														
	Other														
Ice rinks	Sherwood Park														
	Edmonton														
	Other														
Bowling alleys	Sherwood Park														
	Edmonton														
	Other														
Pool halls	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week Three							Week Four						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Recreation (Continued)															
Swimming pool	Sherwood Park														
	Edmonton														
	Other														
Bingo	Sherwood Park														
	Edmonton														
	Other														
Community centre	Sherwood Park														
	Edmonton														
	Other														
Others (please specify)	Sherwood Park														
	Edmonton														
	Other														
3. Personal Services															
Laundry/dry cleaner	Sherwood Park														
	Edmonton														
	Other														
Hairdresser/barber	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week Three							Week Four						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Personal Services (continued)															
Car/truck repair	Sherwood Park														
	Edmonton														
	Other														
Vehicle rental	Sherwood Park														
	Edmonton														
	Other														
Post office	Sherwood Park														
	Edmonton														
	Other														
Plumber	Sherwood Park														
	Edmonton														
	Other														
Electrician	Sherwood Park														
	Edmonton														
	Other														
Gasoline station	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week Three							Week Four						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
4. Professional Services															
Bank	Sherwood Park														
	Edmonton														
	Other														
Insurance	Sherwood Park														
	Edmonton														
	Other														
Lawyer	Sherwood Park														
	Edmonton														
	Other														
Accountant	Sherwood Park														
	Edmonton														
	Other														
5. Clubs															
Social	Sherwood Park														
	Edmonton														
	Other														
Service	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Location of Expenditures	Week Three							Week Four						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Clubs (continued) Political	Sherwood Park														
	Edmonton														
	Other														
Sports	Sherwood Park														
	Edmonton														
	Other														
Charity	Sherwood Park														
	Edmonton														
	Other														
6. Entertainment Taverns, bars, lounges	Sherwood Park														
	Edmonton														
	Other														
Movies (cinemas, drive-ins)	Sherwood Park														
	Edmonton														
	Other														
Restaurants, snack bars	Sherwood Park														
	Edmonton														
	Other														
Dances, discos, shows, concerts	Sherwood Park														
	Edmonton														
	Other														

$ Spent

Item - Group	Loczt1on of Expenditures	Week Three							Week Four						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Entertainment (continued) Spectator sports	Sherwood Park														
	Edmonton														
	Other														
7. Place of Worship	Sherwood Park														
	Edmonton														
	Other														

MAIL ORDER SERVICES

Could you please indicate what types of goods were purchased by mail order services, how much you spent on each item, and at what stores were these purchases made.

TYPE OF GOOD	$ SPENT	PLACE OF PURCHASE	
		DEPARTMENT STORE	LOCATION (Street/Ave.)

PURCHASES BY TELEPHONE

Could you please indicate what types of goods were purchased by telephone, how much you spent on each item and at what stores were these purchases made.

TYPE OF GOOD	$ SPENT	PLACE OF PURCHASE		Purchases by Catalogue
		DEPARTMENT STORE	LOCATION(Street/Ave.)	

NOTE: Please indicate with an "X" which of these goods were purchased by catalogue.

APPENDIX III

LETTERS OF INTRODUCTION

FORT SASKATCHEWAN

Town of Fort Saskatchewan

10005 - 102 STREET FORT SASKATCHEWAN, ALBERTA T8L 2C5
PHONE (403) 998-2266

June 3, 1977.

The University of Alberta,
Department of Geography,
Edmonton, Alberta.
T6G 2H4.

Attention: Dr. R.G. Ironside,
Professor.

Re: Commuter Expenditure Pattern Study

The Town of Fort Saskatchewan offers support to the above in anticipation of evaluating future population compositions.

Various opinions are expressed about commuters' expenditure patterns within a community. Citizens participating in your survey will have the opportunity to reveal pertinent information on the subject.

We encourage citizens to assist you in your survey. I look forward to receiving a copy of the results.

Sincerely,

H.D. Powell,
Mayor.

HDP/plt

WM. LEDE
MAYOR

E. WEDEL
TOWN MANAGER

TOWN OF LEDUC

CENTERING ALBERTA'S BEST DIVERSIFIED FARMING DISTRICT
PHONE 986-2261 — LEDUC, ALBERTA. T9C 1V8

June 9th, 1977

Dr. R. G. Ironside
Professor
The University of Alberta
EDMONTON, Alberta
T6G 2H4

Dear Sir:

In response to your letter of May 30th, 1977 to Mayor W. Lede, this will confirm that the Mayor and Council are aware of your study on Commuter Expenditure Patterns and that a household survey will be undertaken within the Town of Leduc.

This letter may also be used by the person or persons making the survey as assurance to the householder that the Council is aware of the survey and study.

Yours truly,

E. Wedel
TOWN MANAGER

EW/mjb

THE CITY OF St. Albert
OFFICE OF THE MAYOR

SIR WINSTON CHURCHILL AVENUE AND GRANDIN ROAD, ST. ALBERT, ALBERTA, CANADA, T8N 0G2 (403) 459-6601

101

May 24, 1977

To the Citizens of St. Albert

Re: Commuter Survey

Dr. R.G. Ironside and Mr. Alan Williams, Department of Geography, University of Alberta have received funding from the Department of Business Development and Tourism, Government of Alberta, to carry out a study of the pattern of expenditures made by commuters in the Capital region. I have discussed this study with Dr. Ironside and have received assurances that the information which has been collected will be treated with utmost confidentiality. In addition, this study will assist both the local as well as the provincial governments in carrying out their long-run economic development planning within the region.

It would be appreciated if each of the households contacted in the sample group would take the time to complete the questionnaires which have been prepared. Thank you for your co-operation and assistance in this matter.

Very truly yours,

Dr. Richard H.M. Plain
Mayor

TOWN OF STONY PLAIN

MAYOR: DR. V. KRITZINGER

MANAGER: JOHN E. MADDISON

P.O. BOX 810
5008 - 51ST AVENUE

STONY PLAIN, ALBERTA, T0E 2G0
PHONE 963-2151 OR [illegible]

June 23, 1977

Professor R. Ironside
Department of Geography
University of Alberta
Edmonton, Alberta

Dear Dr. Ironside:

RE: Commuter Shopping Habits

It was a pleasure again to meet you and indeed an honor for this community once more to have been chosen as a study area by your department.

Council unanimously, and enthusiastically, gave support to the idea and we would welcome any further suggestions in which we may be able to assist your program.

Again many thanks for your personal interest in our community and our very best wishes to a successful conclusion.

Yours truly,

Dr. V. Kritzinger
Mayor

VK/db

APPENDIX IV

RETAIL AND SERVICE TRADE OUTLETS IN SELECTED COMMUNITIES WITHIN THE EDMONTON METROPOLITAN REGION, 1975

Retail and Service Trade Outlets in Selected Communities Within the Edmonton Metropolitan Region, 1975

	Number of Outlets				
	Edmonton	Ft. Sask.	Leduc	St. Albert	Stony Plain
Retail Trade	2,642	65	62	72	33
Food	427	7	4	10	2
General Merchandise	66	5	8	3	3
Automotive	605	14	15	15	7
Clothing	269	4	7	6	2
Hardware and Home Furnishings	374	14	6	10	6
Business Equipment and Sales	173	7	4	5	6
Miscellaneous Retail	728	14	18	23	7
Service Trade	1,118	24	19	21	9
Amusement and Recreation	24	-	3	1	-
Personal Services	497	11	9	10	5
Accommodation and Food Services	548	12	6	10	4
Miscellaneous Services	49	1	1	-	-
Total Trade	3,760	89	81	93	42

Source: Retail and Service Trade Statistics, Alberta Treasury, Bureau of Statistics, 1975.

APPENDIX V

ANALYSIS OF CURRENT EXPENDITURES:

EXPENDITURE DIARIES, SUMMER 1977 and WINTER 1977/78

TABLE 7

Spatial Distribution of Current Retail Expenditures

- Summer

Product	Location	Commuters I	Commuters II	Non-commuters I	Non-commuters II	Country Residents I	Country Residents II
Groceries	Edmonton	1660.60	17.0	441.77	14.5	660.17	14.1
	Edmonton Region	36.63	0.4	36.12	1.2	3998.11	85.2
	Home Community	8070.00	82.4	2524.70	82.9		
	Elsewhere	23.99	0.3	47.16	1.5	36.10	0.8
Drugstore	Edmonton	425.92	31.9	106.07	27.3	173.76	41.2
	Edmonton Region	44.92	3.4	-	-	304.07	48.7
	Home Community	843.02	64.0	281.10	72.4		
	Elsewhere	9.76	0.7	1.17	0.3	46.40	11.1
Everyday Clothing	Edmonton	1005.79	71.9	502.61	66.7	735.82	47.2
	Edmonton Region	30.99	1.2	7.00	0.9	888.70	51.4
	Home Community	705.61	26.7	223.77	29.7		
	Elsewhere	7.00	0.3	20.00	2.7	20.90	1.3
Formal Clothing	Edmonton	186.00	61.6	205.99	78.3	262.00	88.2
	Edmonton Region	-	-	-	-	35.00	11.8
	Home Community	116.97	38.4	56.99	21.7		
	Elsewhere	-	-	-	-	-	-
Hardware	Edmonton	1324.03	65.6	68.97	21.1	555.00	70.3
	Edmonton Region	8.30	0.4	3.00	1.1	234.99	29.7
	Home Community	688.79	34.0	256.34	72.6		
	Elsewhere	-	-	15.00	5.3	-	-
Major electric appliances	Edmonton	-	-	1042.93	70.3	-	-
	Edmonton Region	-	-	-	-	-	-
	Home Community	-	-	442.00	29.7		
	Elsewhere	-	-	-	-	-	-
Minor electric appliances	Edmonton	121.00	82.9	-	-	69.02	100.0
	Edmonton Region	-	-	-	-	-	-
	Home Community	25.00	17.1	-	-		
	Elsewhere	-	-	-	-	-	-
Furniture	Edmonton	1897.52	90.9	35.93	100.0	87.00	33.9
	Edmonton Region	-	-	-	-	170.00	66.1
	Home Community	61.00	3.1	-	-		
	Elsewhere	-	-	-	-	-	-
Pet shop merchandise	Edmonton	-	-	-	-	7.35	4.3
	Edmonton Region	-	-	-	-	30.00	95.7
	Home Community	45.02	100.0	69.95	100.0		
	Elsewhere	-	-	-	-	-	-
Camping/ sporting goods	Edmonton	1990.60	87.6	113.37	51.0	188.69	33.6
	Edmonton Region	-	-	-	-	372.65	66.4
	Home Community	281.67	12.4	97.04	44.1		
	Elsewhere	-	-	8.99	3.9	-	-
Jewellery/ furs	Edmonton	36.49	22.1	33.95	54.4	14.74	36.1
	Edmonton Region	4.00	2.5	-	-	23.95	61.9
	Home Community	96.02	60.2	2.00	5.6		
	Elsewhere	24.50	15.2	-	-	-	-
Automobiles	Edmonton	9095.00	65.2	1200.00	99.4	3000.00	61.0
	Edmonton Region	-	-	-	-	4800.00	98.0
	Home Community	4800.00	34.8	530.00	30.6		
	Elsewhere	-	-	-	-	-	-
Liquor	Edmonton	121.50	11.5	21.50	5.4	159.92	28.4
	Edmonton Region	47.35	4.5	9.30	2.3	402.35	71.6
	Home Community	842.00	79.9	383.90	90.7		
	Elsewhere	42.50	4.1	6.00	1.6	-	-
Lumber	Edmonton	3434.41	64.2	14.94	41.7	579.00	57.9
	Edmonton Region	-	-	-	-	422.04	42.1
	Home Community	622.70	15.8	20.97	58.3		
	Elsewhere	-	-	-	-	-	-
Shoes	Edmonton	320.90	66.0	120.98	45.4	260.70	60.1
	Edmonton Region	-	-	-	-	170.07	39.9
	Home Community	162.51	33.2	145.46	54.6		
	Elsewhere	-	-	-	-	-	-
Miscellaneous items	Edmonton	858.49	60.0	382.85	60.6	935.69	52.1
	Edmonton Region	122.71	10.4	6.00	0.4	620.35	34.6
	Home Community	722.13	34.4	516.00	58.7		
	Elsewhere	213.61	18.2	40.50	4.5	240.13	13.4
Total	Edmonton	23,224.03	54.5	4,283.80	44.3	8,575.10	48.4
	Edmonton Region	694.84	1.3	88.42	0.6	10,243.03	57.7
	Home Community	19,871.96	43.8	5,173.36	55.6		
	Elsewhere	327.76	0.6	143.40	1.5	384.01	1.8

Legend: I: Monthly Expenditures in Dollars Derived from Sample.

II: Relative Share to Total Sample Expenditures.

Source: Expenditure Diary, Summer 1977.

TABLE 2

Spatial Distribution of Current Retail Expenditures - Winter 1977/78

Product	Location	Commuters I	Commuters II	Non-commuters I	Non-commuters II	Country Residents I	Country Residents II
Groceries	Edmonton	1871.3	20.8	445.86	13.6	285.95	24.7
	Edmonton Region	91.57	0.8	6.89	0.2	872.94	75.3
	Home Community	7010.55	78.1	2825.27	86.2		
	Elsewhere	46.39	0.5	-	-	-	-
Drugstore	Edmonton	1324.59	44.6	392.14	35.0	186.85	58.9
	Edmonton Region	73.55	3.2	-	-	128.98	40.6
	Home Community	1140.19	49.9	625.74	55.1		
	Elsewhere	85.00	2.4	103.00	9.0	-	-
Everyday clothing	Edmonton	2566.95	69.3	535.95	59.6	231.17	75.6
	Edmonton Region	106.00	3.6	23.13	2.8	74.41	24.4
	Home Community	782.18	26.0	337.69	37.6		
	Elsewhere	36.00	1.2	-	-	-	-
Formal clothing	Edmonton	407.22	58.4	208.79	68.1	69.98	100.0
	Edmonton Region	66.00	7.6	-	-	-	-
	Home Community	200.00	34.0	208.85	40.9	-	-
	Elsewhere	-	-	-	-	-	-
Hardware	Edmonton	229.23	36.8	48.05	24.2	103.42	29.6
	Edmonton Region	-	-	-	-	661.67	70.4
	Home Community	416.26	62.7	153.72	75.8		
	Elsewhere	17.00	2.3	-	-	-	-
Major electrical appliances	Edmonton	252.00	51.5	299.99	57.3	-	-
	Edmonton Region	-	-	-	-	-	-
	Home Community	235.00	48.5	284.00	46.7		
	Elsewhere	-	-	-	-	-	-
Minor electrical appliances	Edmonton	484.69	58.9	22.99	87.2	29.90	100.0
	Edmonton Region	-	-	-	-	-	-
	Home Community	323.95	41.01	3.36	12.8		
	Elsewhere	-	-	-	-	-	-
Furniture	Edmonton	816.33	57.3	-	-	-	-
	Edmonton Region	-	-	-	-	-	-
	Home Community	332.86	23.4	-	-		
	Elsewhere	275.00	19.3	-	-	-	-
Pet shop merchandise	Edmonton	13.29	10.3	117.00	71.9	147.10	100.0
	Edmonton Region	-	-	4.00	2.4	-	-
	Home Community	109.75	89.2	42.06	25.6		
	Elsewhere	-	-	-	-	-	-
Camping/ sporting goods	Edmonton	470.93	97.5	3.96	100.00	-	-
	Edmonton Region	-	-	-	-	12.00	100.0
	Home Community	10.69	2.5	-	-		
	Elsewhere	-	-	-	-	-	-
Jewellery/ furs	Edmonton	547.55	68.9	-	-	914.99	97.1
	Edmonton Region	-	-	35.00	19.7	26.90	2.9
	Home Community	246.30	31.0	101.70	80.3		
	Elsewhere	-	-	-	-	-	-
Automobiles (N)	Edmonton	-	-	-	-	-	-
	Edmonton Region	-	-	-	-	-	-
	Home Community	-	-	205.00	100.00		
	Elsewhere	400.00	100.0	-	-	-	-
Liquor	Edmonton	253.35	11.5	-	-	42.60	37.5
	Edmonton Region	17.00	0.9	10.00	2.4	71.07	62.5
	Home Community	1563.00	82.4	401.96	97.6		
	Elsewhere	46.00	2.1	-	-	-	-
Lumber	Edmonton	779.29	68.2	-	-	-	-
	Edmonton Region	-	-	-	-	-	-
	Home Community	363.19	31.8	65.00	100.0		
	Elsewhere	-	-	-	-	-	-
Shoes	Edmonton	206.95	80.0	127.07	64.0	79.00	100.0
	Edmonton Region	22.00	8.5	-	-	-	-
	Home Community	102.76	39.1	71.50	36.0		
	Elsewhere	-	-	-	-	-	-
Miscellaneous items	Edmonton	1010.91	98.1	392.67	29.8	670.40	97.6
	Edmonton Region	1.88	0.1	2.90	0.2	16.75	2.4
	Home Community	916.83	27.9	749.08	56.6		
	Elsewhere	559.98	17.0	180.96	13.6	-	-
Total	Edmonton	11300.01	42.9	3992.92	27.1	2844.14	63.4
	Edmonton Region	337.71	1.3	72.63	0.5	1642.68	36.6
	Home Community	13427.19	50.8	9833.94	69.2		
	Elsewhere	1427.37	5.4	280.96	2.9	-	-

Legend: I: Monthly Expenditures in Dollars Derived From Sample.

II: Relative Share of Total Sample Expenditures.

Source: Expenditure Diary, Winter 1977/78.

TABLE 3

Spatial Distribution of Current Service Expenditures

- Summer 1977

Facility	Location	Commuters		Non-commuters		Country Residents	
		I	II	I	II	I	II
Medical	Edmonton	694.25	46.4	7.00	1.7	370.07	46.1
	Edmonton Region	-	-	-	-	386.50	48.2
	Home Community	795.41	53.2	395.87	98.3		
	Elsewhere	5.25	0.4	-	-	46.00	5.7
Recreational	Edmonton	233.55	43.6	16.00	5.2	3.50	1.6
	Edmonton Region	72.50	13.5	14.00	4.5	205.55	94.7
	Home Community	227.15	42.4	136.70	44.3		
	Elsewhere	2.00		142.00	46.0	8.00	3.7
Personal	Edmonton	1741.06	36.4	283.01	19.5	1090.53	41.6
	Edmonton Region	251.94	5.3	28.30	1.9	1352.54	51.6
	Home Community	2612.38	54.7	1050.80	72.2		
	Elsewhere	174.01	3.6	92.80	6.4	179.24	6.8
Professional	Edmonton	2865.10	42.8	129.00	9.0	3734.74	69.9
	Edmonton Region	260.90	3.9	13.97	1.0	1607.95	30.1
	Home Community	3360.29	50.2	1223.32	85.1		
	Elsewhere	210.30	3.1	71.39	5.0	-	-
Clubs	Edmonton	170.00	49.9	10.00	18.5	131.50	56.2
	Edmonton Region	2.60		-	-	17.30	7.4
	Home Community	168.50	49.4	44.00	81.5		
	Elsewhere	-	-	-	-	85.00	36.4
Entertainment	Edmonton	1958.32		626.56	55.8	556.19	78.9
	Edmonton Region	126.40	4.1	106.55	9.5	134.01	19.0
	Home Community	663.98	21.4	335.17	29.8		
	Elsewhere	354.23	11.4	54.8	4.9	15.15	2.1
Place of Worship	Edmonton	37.25	5.7	-	-	-	-
	Edmonton Region	90.00	13.7	-	-	4.00	100.0
	Home Community	289.00	43.9	141.86	96.6		
	Elsewhere	241.50	36.7	5.00	3.4	-	-
Total	Edmonton	7688.43	43.6	1071.56	21.9	5886.53	59.3
	Edmonton Region	833.24	4.7	162.82	3.3	3707.85	37.3
	Home Community	8048.56	45.7	3287.72	67.3		
	Elsewhere	1055.44	6.0	365.99	7.5	333.39	3.4

Legend: I: Monthly Expenditures in Dollars Derived from Sample.

II: Relative Share in Total Sample Expenditures.

Source: Expenditure Diary, Summer 1977.

TABLE 4

Spatial Distribution of Current Service Expenditures

- Winter 1977/78

Facility	Location	Commuters		Non-commuters		Country Residents	
		I	II	I	II	I	II
Medical	Edmonton	436.55	42.0	155.00	38.9	-	-
	Edmonton Region	-	-	-	-	107.90	100.0
	Home Community	603.59	58.0	243.52	61.1		
	Elsewhere	-	-	-	-	-	-
Recreational	Edmonton	142.00	30.4	-	-	-	-
	Edmonton Region	15.00	3.2	39.00	16.9	8.50	100.0
	Home Community	309.70	66.4	191.30	83.1		
	Elsewhere	-	-	-	-	-	-
Personal Services	Edmonton	2054.78	35.5	50.75	5.1	303.10	40.0
	Edmonton Region	154.75	2.7	129.10	13.0	384.60	50.8
	Home Community	3418.26	59.1	814.91	81.9		
	Elsewhere	160.05	2.8	-	-	70.00	9.2
Professional Services	Edmonton	2375.52	38.7	405.84	30.6	277.00	100.0
	Edmonton Region	237.00	3.9	13.97	1.1	-	-
	Home Community	3441.76	56.0	907.81	68.4		
	Elsewhere	86.50	1.4	-	-	-	-
Clubs	Edmonton	127.00	22.9	10.00	8.0	16.00	76.2
	Edmonton Region	49.00	8.8	-	-	5.00	23.8
	Home Community	318.50	57.4	83.00	66.4		
	Elsewhere	60.00	10.8	32.00	25.6	-	-
Entertainment	Edmonton	1273.92	59.7	200.00	44.4	180.18	66.9
	Edmonton Region	26.00	1.2	7.45	1.7	89.25	33.1
	Home Community	672.00	31.5	223.40	49.6		
	Elsewhere	160.20	7.5	20.00	4.4	-	-
Place of Worship	Edmonton	75.00	13.2	-	-	-	-
	Edmonton Region	-	-	-	-	19.00	100.0
	Home Community	484.25	85.5	152.62	100.0		
	Elsewhere	7.00	1.2	-	-	-	-
Total	Edmonton	6289.77	37.7	821.59	22.3	776.28	53.2
	Edmonton Region	621.25	3.7	189.52	5.2	614.24	42.1
	Home Community	9108.58	54.5	2616.56	71.1		
	Elsewhere	681.95	4.1	52.00	1.4	70.00	4.8

Legend: I: Monthly Expenditures in Dollars Derived from Sample

II: Relative Share in Total Sample Expenditures

Source: Expenditure Diary, Winter 1977/78.